



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

```
1 CCATTCCAAA CAAGTCAGGA AAGCCTGCAC AGGACTGGAT AAATAATTAA
51 GAACAGAGTG TTCTGAACAT CAACACAAG TGGAAGAACC TTAAGCTGAA
101 GGTACAGTAT ATTATTTTACA CTGAAGGGGC TTGTGTGTGG ACAAGAAAGC
151 GCTGACAGCT CAAATGGATC CCATGGAAC TGAAGATGTC AACATCGAAC
201 CAGATGATGA GAGCAGCAGT GGAGAAAGTG CTCCAGATAG CTACATCAGG
251 ATAGGAAATT CAGAAAAGGC AGCAATGAGC AGTCAATTTC CTAATGAAGA
301 CACTGAAAGT CAGAAATTCC TGACAAATGG ATTTTGTGGG AAAAAGAAGC
351 TGGCAGATTA TGCTGATGAA CACCATCCCG GAACCACTTC CTTTGGAAATG
401 TCTTCATTTA ACCTGAGTAA TGCCATCATG GGCAGTGGGA TCCGTGGCTT
451 GTCTATGTC ATGGCTTACA CAGGGGTCTC ACTTTTATA ATCATGCTGC
501 TTGCTGTGGC AATATTTATCA CTGTATTTCG TTCACCTTTT ATTAAAAACA
551 GCCAAGGAAG GAGGGTCTTT GATTATGAA AAATTAGGAG AAAAGGCATT
601 TGGATGGCCG GGAAAAATTG GAGCTTTTGT TTCCATTACA ATGCAGACA
651 TTGGAGCAAT GTCAAGCTAC CTCTTTATCA TTAAATATGA ACTACCTGAA
701 GTAATCAGAG CATTTCATGG ACTTGAAGAA AATACTGGAG AATGGTACCT
751 CAATGGCAAC TACCTCATCA TATTTGTGTC TGTGGGAATT ATTCTTCCAC
801 TTTGGCTCCT TAAAAATTTA GGTATCTCTG GCTATACCAG TGGATTTTCT
851 CTACCTGCA TGGTGTTTT TGTAGTGTG GTGATTTACA AGAAATTCCA
901 AATACCTGC CCTCTACCTG TTTTGGATCA CAGTGTGGA AATCTGTCT
951 TCAACAACAC GCTTCCAATG CATGTGGTAA TGTACCCAA CAACTCTGAG
1001 AGTTCGTATG TGAACCTCAT GATGGATTAC ACCCACCGCA ATCCTGCAGG
1051 GCTGGATGAG AACCAGGCCA AGGGCTCTCT TCATGACAGT GGAGTAGAAT
1101 ATGAAGCTCA TAGTGATGAC AAGTGTAAC CCAAACTACT TGTATTCAC
1151 TCCCGGACGG CCTATGCAAT TCCTATCCTA GTATTTGCTT TTGTATGCCA
1201 CCTGAGGTC CTTCOCATCT ACAGTGAAC TAAAGATCG TCCCGGAGAA
1251 AAATGCAAAAC GGGTGCAAAAT ATTTCCATCA CGGGATGCT TGTATGTATC
1301 CTGCTTGGCG CCTCTTTTGG TTACCTAACC TTCTATGGAG AAGTTGAAGA
1351 TGAATTACTT CATGCCTACA GCAAGGTGTA TACATTAGAC ATCCCTCTTC
1401 TCATGGTTTG CCTGGCAGTC CTGTGGCAG TAACACAAAC TGTGCCCAT
1451 GTCTCTTCC CAATTCGTAC ATCAGTGATC AACTGTATAT TTCCCAAAG
1501 ACCCTTCAGC TGGATACGAC ATTTCCCTGAT TGCAGCTGTG CTATTTGCAC
1551 TTAATAATGT TCTGGTATC CTGTGGCCAA CTATAAAATA CATCTTCGGA
1601 TTCATAGGGG CTCTTCTGTC CACTATGCTG ATTTTATATC TTCCAGCAGT
1651 TTTTATCTTT AAACCTGTCA AGAAAGAAC TTTTAGGTCA CCCCAAAAGG
1701 TGGGGCTTTT AATTTTCTTT GTGGTTGGAA TATTCCTCAT GATTGGAAGC
1751 ATGGCACTCA TTATAATTGA CTGGATTTAT GATCTCCAA ATTCCAAGCA
1801 TCACTAACAC AAGGAAAAAT AC (SEQ ID NO:1)
```

FEATURES:

5'UTR: 1-163
Start Codon: 164
Stop Codon: 1805
3'UTR: 1808

FIGURE 1A



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

HOMOLOGOUS PROTEINS:

Top BLAST Hits:

	Score	E
CRA 145000039337444 /altid=gi 12017941 /def=gb AAG45335.1 AF295...	975	0.0
CRA 114000033649823 /altid=gi 10945621 /def=gb AAG24618.1 AF298...	597	e-169
CRA 160000003782430 /altid=gi 8677401 /def=gb AAF75589.2 AF1736...	591	e-168
CRA 148000002720069 /altid=gi 8248427 /def=gb AAF74195.1 AF2496...	587	e-166
CRA 87000000006802 /altid=gi 7243145 /def=dbj BAA92620.1 (AB03...	578	e-164
CRA 18000005069115 /altid=gi 5870893 /def=ref NP_006832.1 tran...	500	e-140
CRA 88000001154721 /altid=gi 7406950 /def=gb AAF61849.1 AF15985...	496	e-139
CRA 66000019404613 /altid=gi 9506837 /def=ref NP_061849.1 amin...	495	e-139
CRA 100000004435450 /altid=gi 8926332 /def=gb AAF81797.1 AF2730...	492	e-138
CRA 335001098689635 /altid=gi 11434147 /def=ref XP_006635.1 hy...	480	e-134

EST:

gi 10934204 /dataset=dbest /taxon=96...	1072	0.0
gi 10286121 /dataset=dbest /taxon=96...	718	0.0
gi 9872634 /dataset=dbest /taxon=960...	680	0.0
gi 2656674 /dataset=dbest /taxon=9606 ...	549	e-154
gi 9882497 /dataset=dbest /taxon=960...	541	e-151
gi 689641 /dataset=dbest /taxon=9606 /...	525	e-147

EXPRESSION INFORMATION FOR MODULATORY USE:

library source:

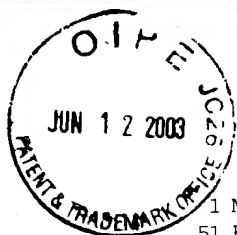
Expression information from BLAST dbEST hits:

gi|10934204 Whole embryo (mainly head)
gi|10286121 Hepatocellular carcinoma
gi|9872634 Non-cancerous liver
gi|2656674 Fetal liver spleen
gi|9882497 Non cancerous liver
gi|689641 Liver

Expression information from PCR-based tissue screening panels:

Mixed tissue (Brain, Heart, Kidney, Lung, Spleen, Testis, Leukocyte)

FIGURE 1B



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

1 MDPMELRNVN IEPDESSSG ESAPDSYIRI GNSEKAAMSS QFANEDTESQ
51 KFLTINGFLGK KKLADYADEH HPGITTSFGMS SFNLSNAIMG SGILGLSYAM
101 AYTGVILFII MLLAVAILSL YSVHLLKTA KEGGSLIYEK LGEKAFGWPG
151 KIGAFVSIIM QNIGAMSSYL FLIKVELPEV IRAFMGLEEN TGEWYINGNY
201 LIIFVSVGII LPLSLKKNLG YLGYTSGFSL TOMVFFVSUV IYKKFQIPCP
251 LPVLHDHSGN LSFNNILPMH VMPLPNSES SDVNFMDYT HRNPAGLDEN
301 QAKGSLHDSG VEYEAHSDDK CEPKYFVENS RTAYAIPILV FAFVCHPEVL
351 PIYSELKDRS RRRMQIVSNI SITGMLVMYL LAALFGYLTG YGEVEDELLH
401 AYSKVYILDI PLIMVRLAVL VAVTQTVPIV LFPVRTSVIT LLFPRKPPSW
451 IRHFLIAAVL IALNNVLVIL VPTIKYIFGF IGASSATMLI FILPAVFYLK
501 LVKKETFRSP QKVGALIFLV VGIFFMIGSM ALIIDIWYD PPSKHH (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 5

- 1 83-86 NLSN (SEQ ID NO:6)
- 2 260-263 NLSF (SEQ ID NO:7)
- 3 264-267 NNTL (SEQ ID NO:8)
- 4 276-279 NNSE (SEQ ID NO:9)
- 5 369-372 NISI (SEQ ID NO:10)

[2] PDOC00004 PS00004 CAMP_PHOSPHO_SITE
cAMP- and cGMP-dependent protein kinase phosphorylation site

503-506 KKET (SEQ ID NO:11)

[3] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 7

- 1 33-35 SEK
- 2 49-51 SQK
- 3 129-131 TAK
- 4 290-292 THR
- 5 360-362 SRR
- 6 473-475 TIK
- 7 506-508 TFR

[4] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 5

- 1 18-21 SSGE (SEQ ID NO:12)
- 2 22-25 SAPD (SEQ ID NO:13)
- 3 129-132 TAKE (SEQ ID NO:14)
- 4 305-308 SLHD (SEQ ID NO:15)
- 5 309-312 SGVE (SEQ ID NO:16)

FIGURE 2A



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 6

- 1 95-100 GLSYAM (SEQ ID NO:17)
- 2 153-158 GAFVSI (SEQ ID NO:18)
- 3 164-169 GAMSSY (SEQ ID NO:19)
- 4 186-191 GLEENT (SEQ ID NO:20)
- 5 296-301 GLDENQ (SEQ ID NO:21)
- 6 482-487 GASSAT (SEQ ID NO:22)

[6] PDOC00009 PS00009 AMIDATION
Amidation site

58-61 LGKK (SEQ ID NO:23)

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	79	99	1.125	Certain
2	102	122	2.503	Certain
3	153	173	1.197	Certain
4	197	217	1.785	Certain
5	222	242	2.123	Certain
6	332	352	1.240	Certain
7	370	390	2.166	Certain
8	414	434	1.301	Certain
9	453	473	1.520	Certain
10	476	496	2.166	Certain
11	515	535	2.628	Certain

FIGURE 2B



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

BLAST Alignment to Top Hit:

```
>CRA|145000039337444 /altid=gi|12017941
/def=gb|AAG45335.1|AF295535_1 (AF295535) amino acid
transport system A3 [Rattus norvegicus] /org=Rattus
norvegicus /taxon=10116 /dataset=nraa /length=547
Length = 547

Score = 975 bits (2492), Expect = 0.0
Identities = 478/547 (87%), Positives = 508/547 (92%)

Query: 1 MDPMELRNVNIEPDDESSGESAPDSYIRIGNSEKAAMSSQFANEDTESQKFLINGFLGK 60
MDP+ELR+VNIEP ++S S +S Y +GNSEK AM SQFANED ESQKFLINGFLGK
Sbjct: 1 MDPIELRSVNIEPYEDSCSVDSIQSCYTGNGNSEKGAMDSQFANEDAESQKFLINGFLGK 60

Query: 61 KKLADYADEHHPGTTSFGMSSFNLSNAIMSGILGLSYAMAYTGVILFIIMLLAVAILSL 120
K L DYADEHHPGTTSFGMSSFNLSNAIMSGILGLSYAMA TG++LF+IMLL VAILSL
Sbjct: 61 KTLIDYADEHHPGTTSFGMSSFNLSNAIMSGILGLSYAMANTGIVLFFVIMLLIVAILSL 120

Query: 121 YSVHLLLTAKBGGSLIYEKLGKAFGWPGKIGAFVSITMGNIGAMSSYLFIIKYELPEV 180
YSVHLLLTAKBGGSLIYEKLGKAFGWPGKIGAF+SIITMGNIGAMSSYLFIIKYELPEV
Sbjct: 121 YSVHLLLTAKBGGSLIYEKLGKAFGWPGKIGAFISITMGNIGAMSSYLFIIKYELPEV 180

Query: 181 IRARMGLEENTGEWYINGNYLIIFVSVGIILPLSLLKNLGYLGYTSGFSLTOMVFFVSVV 240
IR FMGLEENTGEWYINGNYL++FVSVGIILPLSLLKNLGYLGYTSGFSLTOMVFFVSVV
Sbjct: 181 IRVFMGLEENTGEWYINGNYLVLFVSVGIILPLSLLKNLGYLGYTSGFSLTOMVFFVSVV 240

Query: 241 IYKQFQIPCPFLVLDHSGNLSFNNTLPMHVVMLPNNSESDVNFMDYTHRNPAGLDEN 300
IYKQFQIPCPFLVLDH+ GNL+FNNTLPMHV+MLPNNSES+ +NFM+DYTHR+P GLDE
Sbjct: 241 IYKQFQIPCPFLVLDHNGNLTFNNTLPMHVIMLPNNSESTGMNFMVDYTHRDPGLDEK 300

Query: 301 QAKGSLHDGSGVEYEAHSDDKCEPKYFVFNSTAYAIPIILVFAFVCHPEVLPITYSELKDRS 360
A G LH SGVEYEAHS DKC+PKYFVFNSTAYAIPIIL FAFVCHPEVLPITYSELKDRS
Sbjct: 301 PAAGPLHGSGVEYEAHSGDKCQPKYFVFNSTAYAIPIILAFVCHPEVLPITYSELKDRS 360

Query: 361 RRRMQTVSNISITGMLVMYLLAALFGYLTFYGEVEDELLHAYSKVYTIDIPILMVRLAVL 420
RRRMQTVSNISITGMLVMYLLAALFGYL+FYGEVEDELLHAYSKVYT D LLMVRLAVL
Sbjct: 361 RRRMQTVSNISITGMLVMYLLAALFGYLSFYGEVEDELLHAYSKVYTFDTALIMVRLAVL 420

Query: 421 VAVTQTVPIVLFPIRISVITLLEFPKRPFWSWIRHFLIAAVLIAANNVLVILVPTIKYIFGF 480
VAVT TVPIVLFPIRISVITLLEFP+RPFSW++HF IAA++IALNNVLVILVPTIKYIFGF
Sbjct: 421 VAVILTVPVILFPIRISVITLLEFPRRPFWSWKHFGIAAIIIALNNVLVILVPTIKYIFGF 480

Query: 481 IGASSATMLIFILPAVFYKLKVKETFRSPQKVGALIFLVVGIFFMIGSMALIIIDWIYD 540
IGASSATMLIFILPA FYLKLKKE RSPQK+GAL+FLV GI FM+GSMALIIIDWIY+
Sbjct: 481 IGASSATMLIFILPAAFYKLKVKKEPLRSPQKIGALVFLVTGIIIFMIGSMALIIIDWITYN 540

Query: 541 PPNKHH 547 (RESIDUES OF 1-547 OF SEQ ID NO:2)
PPN HH
Sbjct: 541 PPNPDH 547 (SEQ ID NO :4)
```

```
>CRA|114000033649823 /altid=gi|10945621
/def=gb|AAG24618.1|AF298897_1 (AF298897) amino acid
transporter system A [Homo sapiens] /org=Homo sapiens
/taxon=9606 /dataset=nraa /length=506
Length = 506

Score = 597 bits (1522), Expect = e-169
Identities = 315/549 (57%), Positives = 383/549 (69%), Gaps = 46/549 (8%)

Query: 1 MDPMELRNVNIEPDDESSGESAPD---SYIRIGNSEKAAMSSQFANEDTESQKFLINGF 57
M E+ +I PD++SSS S D SY +++AA+ S +A+ D E+Q FL
Sbjct: 1 MKKAEMGRFSISPDESSSYSSNSDPNYSY----PTKQALKSHYADVDPENQFLLESN 56
```

FIGURE 2C



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

Query: 58 LGKKKLADYADEHHPGTTSPGMSFNLNNAIMSGGILGLSYAMAYTGVLFTIDMLLAVAI 117
LGKKK Y E HPGTTSPGMS FNLNNAI+GGGILGLSYAMA TG+ LFII+L V+I
Sbjct: 57 LGKKK---YETEFHPGTTSPGMSVFNLSNAIVGSGILGLSYAMANTGIALFTIILTFVSI 113

Query: 118 LSLYSVHLLLLKTAKEGGSLIYEKLGKAFGWPGKIGAFVSITM~~Q~~NIGAMSSYLFIIKYEL 177
SLYSVHLLLLKTA EGGSL+YE+LG KAFG GK+ A SITM~~Q~~NIGAMSSYLFII+KYEL
Sbjct: 114 FSLYSVHLLLLKTANEGGSLLYBQLGYKAFGLVGKLAASGSITM~~Q~~NIGAMSSYLFIVKYEL 173

Query: 178 PEVIRAFMGLLENTGEWYINGNYLIIFVSVGIILPLSLKNLGYLGYTSGFSLTOMVFFV 237
P VI+A +E+ TG WYINGNYL++ VS+ +ILPLSL +NLGYLGYTSG SL CMVFF+
Sbjct: 174 PLVIQALINIEDKTGLWYINGNYLVLLVSLVILPLSLFRNLGYLGYTSGLSLLCMVFFL 233

Query: 238 SVWIYKKFQIPCLPFLVDHSGNLSENNITLPMHVMLPNSESSDVNFMMDYTHRNPAEL 297
WVI KKFQ+PCP+ + N + N TL ++P
Sbjct: 234 IWVICKKFQVPCPVEAA--LIINETINTLTQTALVP----- 269

Query: 298 DENQAKGSLHDSGVEYEAHSDDKCEPKYFVNSRTAYAIPILVFAFVCHPEVLPIYSELK 357
+ + +D C P YF+FNS+T YA+PIL+F+VCHP VLPYI ELK
Sbjct: 270 -----ALSHNVTEHDSRPHYFIENSQTVXAVPILIFS FVCHPAVLPIYEELK 317

Query: 358 DRSRRKMQTVSNISITGMLVMYLLAALFGYLTFYGEVEDELLHAYSKVYTLDIPLIMVRL 417
DRSRR+M VS IS M +MYLLAALFGYLTFY VE ELLH YS + DI LL+VRL
Sbjct: 318 DRSRRRMNVSKISFFAMFLMYLLAALFGYLTFYEHVESELLHTYSSILGTDILLLLIVRL 377

Query: 418 AVLVAVTQTVPIVLFPIRISVITLLFPKRPFWSIRHFLIAAVLIAANNVLVILVPTIKYI 477
AVL+AVT TVP+V+FPIR+SV LL + FSW RH LI ++A N+LVI VPTI+ I
Sbjct: 378 AVLMAVTLTVFVWIFPIRSSVIHLLCASKDFSWRHSITVSIILAFINLLVIFVPTIRDI 437

Query: 478 FGFIGASSAIMLIFILPAVFYKLKVKETFRSPQKVGALIFLVGIIFFMIGSMALIIDW 537
FGFIGAS+A+MLIFILP+ FY+KLVKKE +S QK+GAL FL+ G+ M GSMALI++DW
Sbjct: 438 FGFIGASAASMLIFILPSAFYIKLVKKEPMKSVQKIGALFFLLSGVLWMTGSMALIVLDW 497

Query: 538 IYDPFNSKH 546 (RESIDUES OF 1-546 OF SEQ ID NO:2)
+++ P H
Sbjct: 498 VHNAPGGGH 506 (SEQ ID NO :5)

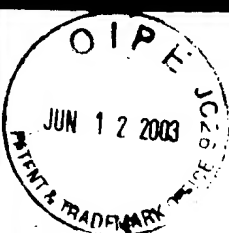
Hmmer search results (Pfam):

Model	Description	Score	E-value	N
PF01490	Transmembrane amino acid transporter protein	187.0	2.9e-52	2
CE00398	E00398 CD53	4.0	4.8	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
CE00398	1/1	90	110 ..	1	23 [.	4.0	4.8
PF01490	1/2	99	236 ..	1	179 [.	58.9	2.5e-14
PF01490	2/2	305	529 ..	200	467 .]	133.9	3e-36

FIGURE 2D



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

1 AGCTTAGCAA TATGGATCAA GAGGTCCAAT ACCTGATTAA TAAAAGTTTC
51 AGGAGTAAAC AAAGGGGAAG AAATAGTTTTT TTAAATAGT AGAAGCTTTTT
101 TTATTTTTTAG AAAATGTGTC TTCTATAGAA GAAAGACAAG CCTTTTGATT
151 GGGCGTCTG CATGCTGAGT ATGATGAATT TTAAGGCGA CTCACATCTA
201 GTACGTCGT GATGAAAGGA TAAGGATAAA AATTCTGAAA TCCTCAGAAA
251 ACCATCGATA AATTATCTAT AAAGAAATAA GAGGAGACT CATCAATAGA
301 AGCTAGAAGA GAGAAGTTTC TTCAATATTC TGAAGGAAAA TGCTTCGAA
351 TCTAGAATTC AAACAATTAA CAAAGTTTGA AGGCAAAATA AAGAATTTTC
401 CAACATGAAG CAACTCAGAA ATTCTATTTA CAGACATAGG CTCATTGIGT
451 GAAAAAGATT ATTCAAGGCA TTATTTTAGC ATAATGCAA ATAAACTGAA
501 GAAAGAAGAT AGAATGCCGT TCAAGAACT AGCAGCTGAG CAAGACTCAG
551 AGGTTGGAGG AGGAAGCCAT TCAGAATGAG AAAGAGCATA GAAAATTTGC
601 TTCAAGATT TTGGTAATAT AGAATTATAT TTCATTATT ATGTAGTCAA
651 ATACACCACT TTGTCTTAG GGCATACTAT TTATACAGTG ATAATACTGT
701 AATTGCTGCT TATTGGTTTT CCATGTTTAG AAACAACCTA CAGGCAAGTT
751 ATGACACTTG TTTCACAGAA CAAGATGAAA ATATTATGAT TCTCAATTG
801 TAAAAGTATT TTATTAACTA AAATAATTAG GAGTGTAGGA GAAGGAAGGA
851 AAGAAAGAAA AAGTATGCTA ATGTCTTAT TTTTATGGG TAACAGTCT
901 AAAATCAGTA AACCAAGTCA AAAAAGCTTT AGTGAATTAT TCAGATCTAG
951 AATGGCTAAC TTAAAGTAA AAGCTAAAAA CAGAAACCGT CAATAGTGGT
1001 TGCTGCTGGG AAGTGAGACT GGTACTGTGT GAAGAATGAG GAAAACCTTT
1051 GTACTCATTT AGTGAGTTTC TTTTTTTTTT CTTTTACCA TATGCATGTC
1101 TTACTTCTAT TCTCTCTAG CTTTTAACCT GCTTCTTTTC ATCTTTTATG
1151 TATATACATT TAGGCTGCTT TATATTAAATA ATAGTTTCAT TTTTGTCTT
1201 CCTGCTTAAA ACACGTGTGT CTATTTTTTT AAATTCGTAG AACTGCTTTC
1251 TTATTTCTTA GACAATTCTC TGCCATTATC TCTTTCGTG TTGTCTCACC
1301 CTAGTCTCAC AATTCTCTAT ATTGGAATGA CTATCAGTGT ATATTGAAC
1351 TTGTAATCTT TATTTTTTCC CCATTCCTCT TAACTTCTTA TTGTATTTT
1401 TCTTTTTTTA ATCTCTTCAT GCTATAATT GAGTGATTTC CACAGATCTG
1451 TCTTTCAATT TTATAAGTCT TCCTCAGCT GAGTTTTTTT AAATTTCAAT
1501 GATTCTATTT TTTTCTTTTT TTTAAGAATT CCTTTTTTTG ACTCTTTTTG
1551 CAACAGCTTG TTCTCCTTTT ATATTCCTTT ATAATGTTTT TATTCTGTGA
1601 AAGTTATCTT CTATTTTTGA ATGTTTTCTT TCAAAATGTC TTTCTTTTTA
1651 TTAATTTAAT GTAAAAGTCC CTTTTAAATT GCTTTGTAT TTGTAGTTCC
1701 TTAGATGTGA ATTTTATCAT TTCTTGTCCT TACTGGCACT CTGTCTAGTG
1751 AGTTTCCATG TGTGTCTTAT ATGTTTTGTA ATTTGAGGAT GTGAACTTT
1801 CTCAGTGTG AGTTGCCCTT CAAAAAGTA CTGCCATGGC ACTGGGTGT
1851 GGAGGTATTC CCATGTGGTA GTTCTGTGTT GTACAGAGGA TAGCACATT
1901 TGTGACTTCT GGAGCAATTT TTAGTATAGT TTCTCTGCTC AAGATTTCT
1951 TATCAAAATG GTATTGCACA TGTATGACC AACTTTTTCA AGAATGATAG
2001 TGTTTCTCTT AATACGATGG TTCAACAATA ATTGAATGAA TCTAATGGTA
2051 AGAATTTTCA AAGAAATTAT ATCACTACA TATAGTAGAT TCAAGGCATT
2101 TTTCAAAAAC ACAATGCCAG TCCACCCCTT TTCATATAC AATTGAGGAA
2151 AATGAGGTCC CCAAATGTTA AATGACTTCT GCTGAGATCC AATGAATTAA
2201 AGGCAGAGCA GAGGCTAAAA TCTAGATCTC TTTGTGTGTA AAATACATTT
2251 TAATTTGACA CAGATGATGA GTAAATGCTA CCCAGAGGTA AATCTGAAC
2301 TTCTTTTGT ACTATCTTCA ACTTTGGCTT CAGGATCCAA GTGCCTAGAA
2351 AGTTACTTCC TAAACTTGAT CCTCACCTAT GTTGCAATT ATCAAGCAAT
2401 TGGTGGTGT AATTCTTTCA TGTCCAATTA AATTAAAGCA GTAATTTTCT
2451 TTCTAGTTAT TGCTAGTAGA GACACTGGTA GATTCTGCTT TGGTAGAAT
2501 TCCTCTGTC ACAATTTACT TTTGTCTTCC TTCTTTTTAA AACATGTATC
2551 CCACTCACA ATACCTAAAT TTCTTTGAAG ACTGCTGCCA TGTTTTAAAG
2601 TTCTTTTTTT TTTCATAGT GACTAGTAAA ACCTGCCATT TTCAATTATC
2651 ATAGGCATC TATAAATATC TGCTAATTTA GCAATTATTA GTAATTTCT
2701 TTCTTCTCTT CCATTTCTTC CTTTCTGTGA TTGGGTAAAG GAACATTTCA
2751 GGATTTGCTT ATGTAAAGTT TTCAGGAGTT TCTTTCTTTC CTCCCTTTTA
2801 CAGAGAGCAT ACAAATGTA GATGATTCAT ATTCATTAT TTCAATTTAA
2851 TAAAATTATA ATGATGTATG TTGTGTCTG TTTGCAGAAC AGAGTGTCT
2901 GACATCAAC ACAAGGTGA AGAACCTTA GCTGAAGGTA CAGTATATTA
2951 TTACACTGA AGGGCTTGT GTGTGGACAA GAAAGCGCTG ACAGCTCAAA
3001 TGGATCCCAT GGAATGAGA AATGTCAACA TCGAACGAGA TGATGAGAGC
3051 AGCAGTGGAG AAAGTCTCC AGATAGCTAC ATCGGATAG GAAATTCAGA
3101 AAAGCAGCA ATGAGCAGT ATGGGGTTAA AAATTACTAT GTTCCATGGA

FIGURE 3A



Docket No.: CL001010

Serial No.: 09/776,705

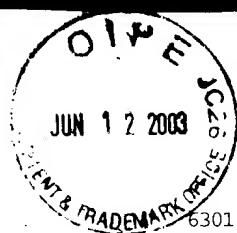
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 12 2003
TECH CENTER 1600

3151 AAAATAAGAC AGGATGTGGA CATGGAAAAC AGGGTCTTGA TGGGAAGAAC
3201 TGGATTATAT ACAGGTAAAT TTGTGATAAC AATGATATTG ATGCTAGCAC
3251 ATCAATTCCC TGGTCTGAA ATACAGTGAT AATGTCAATC TCTTTTGTA
3301 CTGATTAGA ATGAGGTA CAATGTCTTT GTCTCCATTA ATAATGTGTA
3351 ATAATTTTAA TTATTTTAGC CTATGTCTCC TCTTATCTTT CTCAGATTCC
3401 TCTTTGAATG TTGCTACACC TCCTGGTTTC TGTAGGGATT CTTTCTCTC
3451 TAAAAGTATC CTCTGGGCAA GCTCACTCAC AACTACTATG GCCTCACCCCT
3501 CCAAATATAT GCCATATACC CAGCCTGTTA AGTTTCTCTA CTGAATTTCA
3551 GATAATTATA TCTGAATGTC TACTGCACGT CTCTACTGGA CCATTACTGT
3601 GTCTAAATTG CCTCATTTAT AAAGTTAAAC CTGTAATGTC TAATACTGAA
3651 CTCTATCTTT TCCCTCCAAA ACCCTGCTCCT CCTCTAGTAA TCCCATCCT
3701 AGTGAATAAC ACTGCTATCA TGTAGCAACT CACTCAAAAG CCCCTAGGTG
3751 TAAACTTTGA CCCACATAGC CAACGGTCAG TCATATCCAG TTGGTTTGAC
3801 CTATTTAATG CTTCAAATAC ACCTACTTTT CTGTACCCAT TCTACTGTGG
3851 TCTTAGGTGA GGCTACATT AAATGTGAGA CAGGGAGAGA GCCCTGATTT
3901 CTCTCCCTGT CTTCATTTT GCTCTCCTCT GTCTAGCCCT CTACACTCCT
3951 GCAAGAGCAA TCTCTTACAA TTGCAAAATG AATCAATTTT CATCCTTAGA
4001 TAAAGCCCTT CTGCACCTCT CCAATAGCCA TAAGAGAAG TAGATTACAC
4051 ACACCTGCTG GCACGTAAAG TCCTTTTGTA TCTGTCTCTG ACCTGCCCT
4101 CCTGTCTGT TTTTGGCCCT CTCCCTATTT GTTACTTGTT GCCCTCACTC
4151 ATTCTGCTCC AACTGCTGG AATCAGTCAC CTGCTCCCTT TTTCTCCGTG
4201 TTGACACCTC TCATCCTTCA AGAATCAGCT CAACATCAGG TCTCCTATGC
4251 AGCCTTTTCC AAATTACTCT ACTCCCCCAT GTAGAAGTGA CTGCCCTCC
4301 TTCATGTACC CTCTCCCTGT GCAGATGTTA ATTACGCCAC TACTACAGGT
4351 TAATGGCCTC TGTGGTCCA CCACCTGCCA CATTGTCTGG TGCATAGTGA
4401 GTGCACAATA GTTATTTGAT AAGTCAATTG ATTTCCCAAA AAATGTATA
4451 TCAAAATTGA CATGATTTAA GATGCTCAGA AGGGAATTTT TGACCAAATC
4501 TAGGGGTGAA ATAGAGAATA TTGTGCTCAA ACAAGACTT CTATTTTAT
4551 TTACAACACC CAGGAAAATC CATCAGGAGA AACTACCGTT CTCTCTCAA
4601 GTAGCTCAGT GCAATGAAT TTAGGGATGT CGGACTAGAG AGGCCACTGA
4651 GATGTAAATT ATAGCATTTT CTAAATTAGG TGACCTTTGA AGAAACACTA
4701 GGGTGCTAGA AGACAGGGCT TTGGAGTCTG CAGAGTAGTT GCCCTGCTTT
4751 AGAGAAGCTG TTGTCTCTCT TTGAGCTTCA ATGGAAAATG TAAATGGCA
4801 AACCAACAGC TGCTTTTCAA GGATGAGATG GGTGACCAGA ATATAGATGA
4851 CATTCAATAC TTTTATTTA CTCTCCTTC ACTGCATTAC CCTCAGTAAA
4901 TTGATTCAA CCTGAGGATG TTTCTGAAAG GCATGCACAC AAATATGAGC
4951 TCTGCGGAGG TTGACAGAT TAAAGGGGAC ACCCTCTTAA GAACGTTCAT
5001 AGGTCAATC CACTTGATCC TCAAAAGCCA GAGTAGAAAG AGCATGAATG
5051 CTTTCTTAA GCTTCATGCA ATGTGTTCCG AACCCTCAC AGTGACTTAC
5101 CTTTATCTC CTGGCTTAAA CATAGGACAT CATTTTGAG TTTTAAAAAT
5151 CAGTTTAAAG AGATGGGTTT TATCTATGTG TGGTTTGGAT TGAACCTTA
5201 AATGTAAATT TTGAGAAAT TCAACATAAT GTATTTATTT GTGATCATTA
5251 TACTTGTGTT TTCAATACAT GCTGGGTTTG GTATCAAAAC ATTTAACATA
5301 CTGGGGACAT TTCTCATCTA TTTTATACAA TCTTGGCATG TTAATGACT
5351 ACACTCATC TCATGCCAAA ATAAGACAT GCAAATGCC CAAAGAAAGA
5401 AAATCTGTTT ACTTTCAAAT TCTCAATTTT AAAAATCTAT ATGGAATACA
5451 GATTTTAGTT TATTGATTAA AATAAGATT CCAGAGTTTA AATTCTAGGT
5501 GGCATTTTGT TTTTATAGT CCTCAGGCC ATTTTAGGCT TCATTTTATC
5551 CTGTCTCTC AGTCTCCAAC TGTGAACATT ATGTACCAGT CTTACATAG
5601 CAGGTACATT AATTACAGC CATTAAATGTA AACCAAAA GAGTGGTGGG
5651 CAGTGGGTGG GGGGTGAATG GAAATGGAAA GAGGCAACAA CTGAGGGCAT
5701 TGTGCTTTCT GTGAGAAATA TGGGGAGAAG GCTAGGAAAT GTTCTTAACT
5751 TGTGTACTCA GAGCTATTTA TGCCCTGAGT TCTAGAAAAG CACATACAAC
5801 TTTGTGGTTT CGTGTGCTGT TTCTATCTAC ATCTCAIAC GTTTCTATT
5851 CTCAAAAGT AACCTGTCA TCCTCTTTCC TCTCCAGATT ATTTTCAGGA
5901 TTAGCTTCTG TTATAAAAA TAGCTGTGAC AGATCTCTTA CAATAATTAT
5951 TTCTATTTT ATTTCTAAGG TTTATTTATT TATTTATTTA GACAGACAGA
6001 GTTTCACCTT TGTGGCCCAT GCTGGAGTGC AATGGTGCAA TCTCGGCTCA
6051 CTGCAACCTC TGCCCTCCAG GTTCAAGCGA TTCTCTGCT TCAGCCTCCT
6101 GAGTAGCTGG GATTACAGGC GCCTGCCACC AACTCGGCT AACTTTTGT
6151 ATTTCTAGTA GAGACGAAT TTACCATGT TGGCCAGGCT GGTCTTGAAC
6201 TCTGACCTC AAGTTATCCA CCCACCTCAG CCTCCCAAAG TGCTGGGATT
6251 ACAGGGGTGA GCCCTGTGC CTGGCCTCTA GGATTAATTT AATAGAACAA

FIGURE 3B



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2300

6301 TCTTCAATTA TTTTATCTTT CTTTATCTTT CTTTTCATGT AGGAAATGTC
6351 CTAATAATTTT CAAACCTCA ATTTGAAAGC ACTTTTAAAA TCATACATAG
6401 TCGAGCATTT TATATAAAAA CAACTAAAAA GTCTGTGACA TTTTGCAGTA
6451 TAAAAATGCA ATGGCAGCAG CAGGCTTAT TAATTGAGCC TCTTGGAAAT
6501 GTGGCTGGTC CTAGGTCCGT AGCCTCAAGG GCGCTGGCTT GTAACGCGAG
6551 GAGCTGACCA GCACAGCTCT ATAACCAAGT TGTACATCTT CTAGCCTGTG
6601 TCCAAGAAAA CCAGAATCAC AACGCTCTGT GGATAGTGAC ATCTTAAAGT
6651 TTTCTTTTCC TCCCAACTCT TTTGCCAGTT CATTGAATTG CTTTAAATAAT
6701 TTCTTTAGTT TCATTCAATTA TCTGTAAATA ATCCATGTAC ATTTTGAGAG
6751 TAATTAAAAAC ACATACGCAC ACACAGAAAC AACCAACACA ACACACAGCT
6801 ACCACTGAAT TACTTTCCAG TAAGAGATGT ATGTATAAAT GATTGTACCA
6851 AAAAAAAAAA AAGAAAGAAA ATACCAGCTA CAGGGCCCTG CCTGGGACTG
6901 CTTGATGCCA GGGGAGAAAT GGGGTCTCCC CCTGGGTATG GGTGGGTATG
6951 GCGCTGCTCG TTCACTTTTC TGAGCCACAG TTCCCTATAG GGATATTTTG
7001 AACATCAGAT GAGATAAGGA TCACAGTGCC TAGGCATTTA ATAAATATTC
7051 GTTGAATTAA TAAATCATC TGATTATGGT ATGGTAGTAG TTCAGAAAAT
7101 TCTGTCAATA CCGTGTACTC TTTCTTTTGA AGGGCTCTAA ATGGGAACAC
7151 AATTAGTTGT AGTCTCTTGC ATAGCTAATG TGAGAAAGAG GGAATGTGGT
7201 ATAACAATTT TTTTAACTAA AAATAATATT TCCTTCTTTT ATAACATCCT
7251 TCTTCCATCC CAAAGTATAG TTGTAAATGG AACTCAAAAT TGTGTGGTCTG
7301 GAATGACCGT TAGTGTGAAG GAGGAAAAGA AAATTGGGGT GTCTTATTTT
7351 CCTCCTCTG ATTCACTTAC TTAGATCACC TGAAACATAC ATATGATTTCA
7401 GAGCATATAT TTAGATGTTT TCACTTTCTT ATTTGTGTGT GTGTGTGTGT
7451 AGTCAATTTG CTAATGAAGA CACTGAAAGT CAGAAATTC TGACAAATGG
7501 ATTTTGTGGG AAAAAAGAAGC TGGCAGATTA TGCTGATGAA CAGTAAAGT
7551 AATCTATGCT TTCAGGCAAT AAACGGGACT GAGGGGTGCT GATCTACCTA
7601 GGTCTCTGTG GGAACAACAT GTGACTGAAA TTTTCCAAGC CTTGATCAGC
7651 ACATTCGTGT TTTATTCAGG CTCTTACTGG AATAAGGGCT TGTTTTTTCC
7701 TGTGTGCCAT ATGGCTGCAT GAATCATTTA TGAAACTTAT GTGTTTTGGG
7751 GGGAAATCAT TCTAACCCTA AGGTAATCTA CAATCATACA TGTTTTCCCT
7801 TCTTTATGTG ACTCCCTTGT TAATTGTAT TTTTACTGAG GCCTCTGCTG
7851 AAACCAAGCA CTGCATTCG TTGAAAAATA CATGCTTTTA TTGATGTGA
7901 GTAATGGCTT TACTCCTGTA ATGTATCTTT AGTCTTCAAT TTTGGACTGT
7951 AATCTGCAGA TAATGTGAGA ATAAGGATAA CCGCTAAAGG TATGCCCTTT
8001 GGCAAAATGT TGCTTATAT ACATCCCTTC TTTTCAAGC ATCCCGGAAC
8051 CACTTCTTTT GGAATGTCTT CATTTAACCT GAGTAATGCC ATCATGGGCA
8101 GTGGATCCTT GGGCTGTGCC TATGCCATGG CCAACACAGG GATCATACTT
8151 TTTATGTIAG TGAATGTATA TGTCTACATT TGGTGATGAA GTCCATGCAT
8201 CCTGGTGGC TTTTCAATT AACAACTCA AGTTTGTATCT TTGTGAAGGT
8251 GAAGACTCAG AGGAGGCTAA TCATGGCACT TGGTCAACCA ACCATCCCTA
8301 ACCCAACGCG AGAAAGTGTA TGTGCTCAAT CAACCAAGT GCTGGAGCAG
8351 CCGGCCAGA AGAATTTTGT TATTCACTAA ATACTTGAAA TAATTGTGGT
8401 TTTAGCAACC AAAAGATCTT TTCCAGAGG CAAATCTGAT TTTATCTCAT
8451 TCTTAGGAAA GAAGCAACCA AGCCTAAGAG CCTGCAATG CCTTGCCCTAC
8501 CTTATGTCCC ATTCCTGTGA CCGCTGTGCG ACAGATACAC TGGGCACAAT
8551 AGCCTTCTCT CCATCCTATG AAGATGCCAC ATTCCCTCTC ACCATTGGAC
8601 CTTTGCACAT GGTCTTGGAA CCGCTCTCTC TTCTTCTCTC ATCTAGTTAA
8651 CTCTCATAT GTCACTTCTG TCTCACCTGA ATACTGCGCG CCTGATCTC
8701 CATGACTGGG GCAATCACC TTATCATAAC ACTCACCACA ATTTTAAATGT
8751 TTTAGTGCCA TTGTCTGAT TCATTGTGTT AATATCTGTC CCTCTGTCTG
8801 GACTATAAGC TCTAGAAAGT TGAGCCCATG TCTGTTTTGA CTCACCAATG
8851 TCTTACCTC CAAACCTAGA GCAGTGCCTG GTACAGGCAA TATTTGTGTGA
8901 GTGACCAAC CTTATCTCTA AACCTACGTA CTTTCAACAA ACTTGTTCAA
8951 ATGCTGCCA AGGGTAGCAG CATCTGGTAG TTGACCTGTA GGTGGATAC
9001 TGCATGTCT ATGACAGACA ACAACAGAGC TTTATGTGCA TCATGTACAG
9051 CCGGCAATTT TCCAGGATAT AGTGGCAGC AGTGGAAATC TTCACAAGAA
9101 TAAAGTCTGA TGTTAGGCAC CACTGTGGAC ACAGATCCTA ATCCCAAATG
9151 CAACGCTAGA GAGTTAAATA ACTGTCTAAG AATGCAACAT TTATATCACA
9201 AATATGTGCT GTTTATGTTC TGAATATCAC ATATGATTAG TAATCACACA
9251 GCTATTTGAG GCTAAGCAT CAGGACTATA AATATTTGTA TTGTGTAGT
9301 GCTTTGATGT AACCTTTTGA TGTATAATAT TCTTCAGCTG AATGGGTTTT
9351 TATATCAACT TTACTTTTAT ATAAGCCATG TTTTGAATA AACTAGGATT
9401 TTAATAATCT GAATTTTAAAT AGCTATGTAT GTAGTCATAT ATTTGTATGC

FIGURE 3C



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

9451 TTTTGTAAATG TGCTTACCTC TAAGACAAAA AAACCTGCCT TTCTTTAATTA
9501 ATTATACATA CCATTAAAAAT GAATTAGGAA GTTACAGATC ACTGATGAAT
9551 AGAAATAGGA AAAACTTCCC CCAATCCCAC AGTCATAGAT CATCTTCATG
9601 AGAGAAGAAT GTTCCACTTT TTAATATGAG GGCTTCATTT TAGGCTTATA
9651 AACACTTACG AGATGAATTT GGTACAGACA ATTAAATCAC TAAACATCAT
9701 GGGGTGTGTT TTGTGTGTCT AAGTAGCCCA GACTGGATTA AGCTTTCTCT
9751 CTTAATTTAT AGCAAGTGAC ACAGTATTTT AAAGGTTTAA CTCTTAGTAT
9801 TTCTCTGCCAG AGAAAGTACA TGTTTAGAAT ACAGGGAATG CTCATTATTT
9851 TTCCAGGGAA CAAAATTATA TAATCTGAAT TACATTATTC CTTAAAAACA
9901 GTTAAGTTCA TAAGGCATAT GGAATAATAT AGGAATAAGT CATTGGTTAG
9951 ACAGTTCTCG CAAACATACT CTATGGAAAA TAAGAGTGCA ACATAGCTAC
10001 AGGGGTATATA AAATTATATA TTCTATGGTC AAATGTACAT TTGTAGTATT
10051 GATTTTCATTT GAAATTACCA AGGGATTAGA TCAATTGTTG GGAAGGTGTA
10101 TTTTTTTAAAA ATAAACAAAG ATAAAGATTT TTTTCTGAA TTCCAGGTAA
10151 AAGGCAGCAT TGCTCTCTCA TTATTTACGT AGATGCTTCT ATCAACATTC
10201 TTATTTTGTG GCTCCAAATC TTGGATTTTG AAAAATACCA ATCCGTATTA
10251 ACATAAAGAA ACCATACATG CATGTGGGGA TCTAACACC AGAAATGACT
10301 CTGAATGCAA AAAAAAAAAA AAAAAAAAAA GGAATTTTC GTGCCCATC
10351 CTTAGCTTTC TCTGCTTTCT CTATTATATA TGCAACTGCC TGCCCTCTTA
10401 TCTTACAAAG TACTTGTGTA TCTAATGCAC AGGATCAGCA GTAATGCAGC
10451 TCAGACTGCA TGCTTTCCGC TTGGATTTC TAGATTTCAG ATTAAAGTTT
10501 AGTCAGGCTA TTGAATAGCC CTTCATTTCT AAGTGCTGAT GTGAATATCA
10551 TGCAATATG ATGTACATAT TCCCATGTGC TGAGTAAGTA GATGTAGCAT
10601 TTGCTAATGT TGCTATACAT TTAGCATCTA AGTTATGAAC CAGATCTAC
10651 CACTGGGTAA CATTAAAAA AAGTTAGGGA CTTCAGGTAT GTAAAAATATA
10701 GCAAAATCTA TTTCTACGAC TTAAAGGGT ATGTGTAGAG TTCTGAAAAG
10751 AATTTCTCAG CCTCCCCAA ATCCACATAC TTTTGGAAAG CTGATGATTG
10801 AAAAGATTAA TGTGATCCTT TATTGTAACTA TCTAACATAA TTACATTTTA
10851 TTTATTGTAG AAACTTTATT ACCTACTCTC TCTTCCCTTT GCAGATCAT
10901 GCTGCTTGT GTGGCAATAT TATCAGTGA TTGAGTTCAC CTTTTATTA
10951 AAACAGCCAA GGAAGGAGGT ATGCTACCAC TTGAGTCCAA CACATTTCTAT
11001 TTTAATTTCT ATAAAGAGT ATTTGAGTCT GTTGTCTCAT AACCTTAGGA
11051 TGATTATAGT CAGTTTACA TTTCATTTTC TTCTGAGCC AGTGACACGA
11101 TCTCTCAGTG TTATAGTTG TTGGGCAAG TGAGAGGCAG GAGTGAAAGT
11151 CAACTGGCTC AGGTTCAAGA CAAATAGAAA AAAGAAATTT CTGATATATG
11201 ATAGAAATAA CTGTTTGTAC TTGCTACATG CAGCTAAAT AAATAAAACC
11251 ATTGATTTCT GTTTGGAGAA CATTTTGATA TATTGCTTAT TGGTTTGTGA
11301 GGTTCATCT TTTGGGCTTA TAATTCTTAT ATGATGTTTA TTACATGTT
11351 TGAGACTCCA GCATGGAATT ATATGACAAA AATATTTTAG TCATTAAAC
11401 AATCTCTTTA ACAAGGCTAT TTATCTTTG ATTTAGGGT CTTTGATTTA
11451 TGAAAAATTA GGAGAAAAG CATTGTGATG GCGGGGAAA ATTGGAGCTT
11501 TTGTTTCCAT TACAATGCAG AACATTTGAG GTAAGGGGAT ATACTTTCCA
11551 ATGGATCCCA TAACTTTTCT ATAGCGTGT CAATAAATAA GAAACTTTAT
11601 GCAATTAAC AGGCATTTA GATACAGAAA AATTGCTACT TATAGTTCTT
11651 AAATTTTAAA ATGATAGTTT CTAAATAGG TTGTGTCTCT GCTTTAATTA
11701 AAAACAGCAA TATCTAAGAA TGAAATAACA TATAAAACCC TGCCAATTGA
11751 ATCTTAGAAT TAAAATATA AATAAAGCT TTCTTGATTT TTAATGTTAT
11801 TATAGCATGA ATTATTAATC TTAATAATG AAGAATTTGT GCTTATATCT
11851 GTCAATGACA AAACAGTTGA CGTTTCTTAT GTGTGACTGA GTTCGATTTA
11901 CTAAACIGAA AAGTGGGTGT CTGGGGGAAC ATAGCCAAAT GCTGTGGTCC
11951 TTGAAACGCA GCTGCACTG AGCCAGCCCA CTAGACAGTG TCTCTGGAAG
12001 TTTACTAAG CAAAAGTCTG GCTAGGCATC AAATGCATTA TAAACCCCG
12051 TTGTGTGATT CTATGGATTC TTATAATTCC CACTGAATTA TCATTCCAG
12101 TGTAGGACCT AGAAATATAT ATATATATTT TTAACAATGT TCTCTGTGTG
12151 GTGTGTGTG CCAACAGCTT CATACGTGTT CTGTGTGTG TTTGGCCCTC
12201 AGAAGGCATC CAAACCAATA TTTCAGATGT CCTGCCGCT GCTTCCCTGC
12251 ACATGGCCCC AGCCATCTCC CCACATAATG ACATTTACTC CCTCACCTC
12301 TACCCAGTCC CTAAACCTGC TATTCTATTT CTCTGATCTT TCTTTTCTCA
12351 GTGAATACCA CCAGCAGTCA TCCAGTTTCT GAGGGCAGAA ATCTGGATGT
12401 CAGCGTAAAT GTTCTCTTTT CCCCACCTCT GCATGTCCAA TCAATGGCA
12451 AAGTCTGTTC ATTTGATCTC TTACTTATCT CTGAACCTC TCTCTCTGT
12501 CGTCTCTCAT GACCACAGAT GATCACCATT TATAGCTCAG ACTAATGCAG
12551 TAGTCTCTTA ACTGGTCTC CTGGCTTGAG TTTCCCTGCT TCTCAGATAA

FIGURE 3D



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/290

12601 ACCTAATTT GTCTCCAGA TAAACTTTCT CAAATTGAG TCIGTTCTA
12651 CTTTTGTCGT GCATAAAAT CTTCAGCATG CCTTTATTAT TTTCAAGGAA
12701 AAACITAAAC TCATTGGACT GACACAAGAT CTTGCTCTAG TTCTTCTGCT
12751 CAATCTTTCT AAACITTTCT AGCAATGCC ATATCTATCT ATCTTTATCT
12801 ATCTATCTAT CTATCTATCT ATCTATCTAT CTATCTATCT ATCATCTATC
12851 AATTTATCCA TCATCTATAC CCTACATGTC CTGTGTCAA CCATAACAAA
12901 TTATAATTTAT TCCCTAACA GTACTATTTT AATATTTTAA AAAATCATCC
12951 ATGCTTTCTT TTCAACGGCT ACTTTCTCCC CTGTACTGTC TCTCAAAGTC
13001 CTCCAACCTT AACACACACG CACACACACA CACACACACA CACACACACA
13051 CACACACAIT TTCTCTCTCA CTCTGCTCAC CTGGTCTATT GCTCCTCTAG
13101 ACTGTGTAAT ACTAGTTCTT CTGGGCTCTC ATGGTCTCTG TTGTATCTAG
13151 TATGTTACTG TTTTCTAAAG GATATTTTAA AACACTTGAG TAGAGAATAA
13201 GCTTTTGGAG TCTGATGGAC CTGAATTTGA GTCTGTTTCT GTCACTATCT
13251 GTGAACCTTG GAAGATCACT GTACTCTTTT GTCTGATTTT TTCAATGTATA
13301 AAAATTACCT TACAAAGGCT ATTGTGAGGA TGAATAAGG TAACATATGG
13351 CACATAATAA GTGTCTGTGA TATGCTTCTC TCTTCTCTGG TTCTCTGCTT
13401 CCATATCCAT GTCTCTGGAG TTGCTGAAT TATTTTAA ATAGGCATTT
13451 AAAAAATTAT AAAACAAATA TATGATGATT GTGAAAACT AAAACACTGC
13501 ATAAATATAT AAATTACCAA GAAAAGTTTA TGTCACTCAT CCTCAGAAAT
13551 AACCTACTAT AGGTTTCTCC CTATGCTTAA TTCAACAAAT ACATTTGAATA
13601 TTGTTAGTAT TGGATCATCT TATGATACCG ATTTTCAGCT TTCTTTTAA
13651 ATTTAACAAT ATGCTTTGAA TATATTTGCA TGTATTTCTT TTTAATGATT
13701 TTTGAGGTTT CCATTACACA AATGTGCTAT AATTTGTTTA CAGTATCTCT
13751 ATTGATGAAC AGTTGGATTG TTTCTAATTT TTCACGTGTA TAAAAATGCT
13801 ACAGTAAATA CACTTGACCA GAGATCTTGC AAACAGGCAA CCCATTTTAA
13851 TAAATAAAAT CACTGGAGTT ATCAAGGATT TCTGGAATGC AGAAATTTCT
13901 TTAGTAAATCT ATCTAATCTT ACTCACCTTG ATAATGGATA GTTGGTAAGC
13951 AGATAAGTAA AATTCAGCCA TATCTTATGA TTTGTGTAA AAAAAATTTT
14001 ATATGTTAAG ACTACAATCT TGGGTAGAAT TTGACAGTAA TATCAAAAT
14051 GTCTCAATTA TTTTACTGGT TTGGAGCCAT ATGCATATTA GCCCCCAAA
14101 TCCCAACAAA TAGACCCTTT TACATTTGTT TCAAACTCTC AGCCTTATCA
14151 AGGTTTAAAG TATCGAGCAT TTCAATAGGAT TGCTTTATAG TTGGTCTAAT
14201 TTAACAACCT AAATAACCG GCATAGCAT AATTAACTCT GGACTCAAGA
14251 AGTTGAGTGG CAGCACTTCA GCTGTGTTTC AAAGCATAGC CACTACTAGC
14301 CTCTTAAACA ATGGAATAAA GTATAAGCG GTCTCTCAGT CAAGCTCAC
14351 ACAGTAAAGA GCGTGACTT TAAGGGAGTA AGATGAAATA TCGTAACATC
14401 ACCCCAGAAA TAATGCTCTC ACTTTGTTTA CTTTATTTGA TTAGTTGATA
14451 TTTGGCAATA GAGAAATCAC TTGTATTTCT CTATTTAACA ACTCTACATT
14501 TAGAACACTT AATTTTCTCA ATCCCTTAA AATTTAATCT TTACTGCAGA
14551 TGTTTTCAACA TTAACAGATT AATGCTTGA TCATTTCTGA TTTTGAAGA
14601 CCAACATATG TAACATCACT GACATCACTG AAAACAGCA ATTAATAGCT
14651 GTAACATTGA ATGGTACCTC ACCAAGCCAG CTAACTAGAA ATATCTCTCTG
14701 TGTTCACACT CTGTAAAGAT TAGCTTTAGC CAAGGCTTTT GCAAAGATTA
14751 ACCAAATATG GTGTACAGAA GGTACATCCG CTATTTGTAA AATCAATTTCA
14801 CTTTGACAGT ACAGAAGAAG CACCAGCCCT TCTGTTTATG ATGTAGTCCG
14851 TCCTTTTCAA GCTGTATGAT TGTGGACATG TCAACTTAAC ATCTCGGAGT
14901 TTTTATATCT TCATCAGTGG AATGAGAATA ACAACATATA TCTGTCTATC
14951 TCACAGGTTT TTTTCAATGA TCAATGAAG TAATGTGCG AACTAACCAA
15001 TGTGGGGAAT TATTATCATC ACTGTACTTT TCATATGAAG TGAAGAAAAT
15051 ATTTTAAAC TCAGTATGTT AATTTACAAT TTAAGTATGT GTTTTAAAGT
15101 GCTGTATAGC AAAAAATCAC TAGAAGGATG TAGGACACAC TTAAAGTTT
15151 CATGTAAAT TTTGTAGTTC TATTTTAAAC TGAATCTTTT GGCCTGTGT
15201 CAACAAATTA AGTTTATCTT TCACCAAAATG GTTGGGCTTG AAAAAAGCGT
15251 GATGCATAAA TATTTACAGT TGTAGGCAAA ATTGTAAATG TATGTATATG
15301 AATACATATT CATTTTTCAC GGGAGAAGGC TTGTAGATTT CATCAAGAAA
15351 TCTTTTCAACA GAGTATATAA TCATTCATGT ATCACTTACC TAGATGCTCA
15401 TGAAATTTTG CCACTTTATA TAATCTCTTA GTTAGCCAAA AGGAGAGTAA
15451 GATGAAGAGG GGGGAAAAAA AAACTTCTTT TGACAAAGAT GGAGAGAAGC
15501 TGTATCTCTT GTATTTCTTT TATCAATCCA GGAAGCTTTT GGTTTTGACA
15551 ATAAGTGTTC TGAGACTTTG TGTACTCTCT AGATAGGTCC CGGAGGACTA
15601 GATTTGTGCT CATCTGCAGA AAACCAGAGG GATATATATG ACTCTGCAGA
15651 CTGCTCTCTT GATTCGCA TCCTCTAGCT GGCCTATGCC TTTTGTGCTC
15701 AGACTACTGC CCAAGTTATA GACACTAACA CAGGCACACT GAGTATGGGC

FIGURE 3E

JUN 12 2003

Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED

JUN 17 2003

TECH CENTER 1600/2900

15751 TATGTGTAAT TATAACTAAT GAGGGCAGAA CCTTAGAAGT GCAGCTTCAC
15801 TGTAAACTTT GGAGCAGGAT TTAACACAGA ATCAGCCCTG ATACTGTATA
15851 CAAAGGTCCA CCTGAAAGAG CTGGAAGGTC AAATGTCTAT CTGGAAGAG
15901 AACCTGGGAG CAGTCCCAA TACACAATGA CTTTCTTTTC CATTTGGGGG
15951 ATTAGATGTT CATCTTACAT ATCCCAAATG TCATAACTTG CTGCAATGTC
16001 ACTTCAGTAC TGTCCACACC ATTAAGCTGT CACATTTTCC ATTTTAGCAA
16051 TGTCAAGCTA CCTCTTTATC ATTAATATG AACTACCTGA AGTAATCAGA
16101 GCATTCATGG GACTTGAAGA AAATACTGGG TATGTCTTAT GCTCCCTCTG
16151 TGACATCAAG TGACTCATTG TACTTGGTCT TTTCTGATTC TAATATCCCT
16201 GTCTCTCACT TCTAGAGAAT GGTACCTCAA TGGCAACTAC CTCATCATAT
16251 TTGTGTCTGT TGGAAATTAT CTTCACATTT CGTCCCTTAA AAATTTAGGT
16301 AAAGATAITTT TCTAAGTGA AATATTTTAA TTTTATTTTC ACATTTAAAT
16351 AGGTAGCTTA ATTGTAGATG CCATATTCAC CTCCCAAAT GCTTCTCTTA
16401 ACTTCTAGGT TATCTTGGCT ATACCAGTGG ATTTTCTCTT ACCTCGATGG
16451 TGTTTTTTGT TAGTGTGGTA AGTGTATGTA TGACATGATC CTGCAAGGTT
16501 GGTAGCATG AGTTTTTTTG TGCCATAAAT AGTGTCTCA TTTTGTCAA
16551 GCATTCCTCT AATATGAAAT AGTTCTTGTA TCACAAGTGA TTTTCTTGTA
16601 GACTAATTTA GAGCAAAAA AGAGCAGCTA CGATTTAAAG ATAGTTGAGG
16651 TAGAATATCA AAGCTACTAC TAATGGTTTG GTCTAGGCAC ACTGGTTATA
16701 TATGGGGAAA AAAGGAAAAC TTCAAGCAGG AACATGACAA TAATCTGGCA
16751 TTTAGAACAG CAGAGGAGAG TCCAGATGA GAAACAAGAA GGCTATATCC
16801 ATATTCACAT GAATCAGCCA TTCTCTCTTA CACATTCAC CCATTAAGAG
16851 AGGACAAGAA CAGTGGGATT AAAGAAGAAA TCTCTCTCTC TAGGCCCCCTG
16901 ACAAAGAGG GAATTTCTTG CACTATCATG AATGCCAAAA TTTATAAAGC
16951 ATTTCCCTCA AGAGGTAAG GAGAAGGAAA AAAAGTTTTC AAGACCATG
17001 TCACCTTAGT TTGAAGAAAT AAGGAAATGA TCATCTTTCT CATGGAAGGG
17051 CATGAAGAG GGTGGGAAGG ATTTCTTGCA AATATTGTCC TGTAACTCT
17101 AAGAGGCAGG GCTGCCAATC ACAGCTCCAA CTCTTCCCTT AGAACAGAGG
17151 CTAGAGGAG TTTACTTTGT CCATTAGTCT AAAAGGAATC CCTAAGTGA
17201 TTCCCTCACC CCCCACCTTA TAAGCCACAC ATATGGATTC TTATTTCAIT
17251 GTTTTTTCTC AAAAAGCTGA TTTTTTTTTC TTTTATAATG ACTGAGTCTA
17301 GGTGATTTAC AAGAAATTC AAATACCTG CCTCTACCT GTTTTGGATC
17351 ACAGTGTGG AAATCTGTCA TTCAACAACA CGCTTCCAAT GCATGTGGTA
17401 ATGTTACCA ACAACTCTGA GAGTCTGAT GTGAACCTCA TGATGGATTA
17451 CACCCACCCG AATCCCTGAG GGCTGGATGA GAACAGGCC AAGGGCTCTC
17501 TTCATGACAG TGGAGTAGAA TATGAAGCTC ATAGTGATGA CAAGTGTGAA
17551 CCAAAIAC TTTGATTTCAA CTCCGGGTA AGTGAGCGGT CCGGCTTCT
17601 AATGAGTACA GTTATGTGTT TTCTAAGTTT TTATTCATA AACGAGATG
17651 GCTGAGATC ACCATCTATG TTGGAATGCT AAACAAGTGG TGTGTCTTT
17701 GTTTTTCAGA CGGCTATGC AATTCCTATC CTAGTATTTG CTTTGTATG
17751 CCACCTGAG GTCTTCCCA TCTACAGTGA ACTTAAAGAG TAAGGCAGCC
17801 ATCATTTTAC CATTTCAATT TGCTTTGAAA TTCTGCTCAT ATGTTCAAAG
17851 ATCTTTTAC AGGAACACA GTTTATAGCT TCTCTTTCAG AGAAATATG
17901 TACTCCATCC ACTCCTCAGT AACATGCTTT AATCAGAAAG GTGGGAATCA
17951 GCOCCACCA GCACTACCTT ATCTTCTTTC TCTCTTTCT CTCCACATA
18001 ATGGTTCAGG GGAGGGGTC ATGGCAGGTG GACAAGGAT CCATGGTTGT
18051 AATAATTTTG GCAGGTTTG GGAATTTAAA TTTGAATTTT GTTCGGAAGA
18101 AATGATGTCA GCTGGACTAG AAATGAAAC ACCCATGACG ACCAAAACIT
18151 ATGGTTAGG GCAGCCTCGA TAAGCCAGTG ATGTCAATTA TAGTCAGCAC
18201 CTAACCTTTC TCTAGAACAC ATTCAATTACA AGAGATGTGT CAATATCTGT
18251 CCTTTGTTGT CTTATTTGTA CAATAGATC ACTGGCTAGA AAATCTTGT
18301 TCTCCAGCT GATGTTCTAT GGTTCAATTG TATTTCTTTC CCTTTGAAGT
18351 TGTGTATATT TGCTTGGGAA CAAAGGATAT GAACCTATTA TAGCTGTTTT
18401 CCTCTTCTCT TTAAGGGAGG ATATTATATA ATAATCTCA ACTTCTTTAA
18451 TCTAGACATC AGTAACCTCA GTCTTCATTC TCACATAATA GCAAAACIT
18501 CCCCATAAAT TCTGATTTAC CTCATAAAAA ATTTCAGAAC ACTTTCAAGT
18551 ATTTTGATGT CTTTGATTTA CTTTGAAAT TACATGTAGC AGTTACTCCA
18601 GAAGCCGAC AATTGATCTT TGGCAGCCAG GTTCTTCTA GAATGTTTTT
18651 CAGAAGCTTT TCAGGTAGTC TGGACTCCTG GCAGTAGTAC TTTGCTGACT
18701 CTAAGTGGT CTTTCTCTCA TTTAAAGTCA TCTCAATTAT AAATGCAAAA
18751 GCTTCTATG TTAGGAGCT GTTTCATCTT TATGTTAAT ATATCTTAT
18801 TCAGTGGCA AGCTACTGA CCTACGTGAA ATAGACTGTT CCTCTCTAG
18851 GGAAATGATT GTTTTAAAGA CTGAAGGACT AGTGTTTAAG AAAAATGGAA

FIGURE 3F



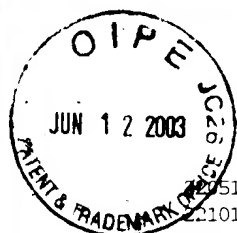
Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2906

18901 ATGAATCCCTC ATTAGCTCTC TAAGACAAAT TTAAATCAGC TATAAGTTTA
18951 TGTACTAAAT ATGTCCTCAT GATTAGCAAT ATAGATATAC TTTTITATTA
19001 TTATTTTCAT TTTGAAAAGT GATTTTITTT TGTAAAGTTTA AAAAACAAAG
19051 CTGTGTGTTC TTTCTTTTTC CAGTCGGTCC CGGAGAAAAA TGCAAAACGGT
19101 GTCAAAATATT TCCATCACGG GGATGCTTGT CATGTACCTG CTTCGCGCCC
19151 TCTTTGGTTA CCTAACCTTC TATGGTAGGT CACTCTGAAA GTCAITCTCT
19201 ATATGCAAAAT CCTTGTITAGG CTGGTCTTGG ACCTGGGTAG GTATGATTTT
19251 TAAAAAATGC CTTCTATAAG CATGCTCTAT AGATGACACA TATTCAATTA
19301 ATATACTATT TTAGTTTGT CACTTGACCT GAGGAAATGG GGCTGATTC
19351 AGOCTGGCTA ACAAGTTACA AGAATTTGTG AATTAAACACC TATTTTATAA
19401 AAAATATCCC TCAACAAAAA TTATTTTCTT CTAGGGATAG ATGATATTTT
19451 TCTGGCTAGA CTCCATAGTC CAACTCAGGC TACAAGTGAT GAGAATGAAT
19501 CCACCTTGAT GTGATAAAGC TCCCTTGATG GAATTAATTA CTGCCACACA
19551 AATAGCAGGG AAACCTGCCAG GTCTCAAGT TTGAATTTGC CTCTCTTTA
19601 CCAGTCAAGT CAAATCTGGG AGCTTGGGAC TTTAGGTAAA ATTTCTGACA
19651 TATCCCATTC TATTTTGTTA TACTAAATGA TTCTCTAAGA AAGAGGACAT
19701 GACAGAAATT CCTTCAATCT AAGAAATGCAC CACCAAAAAA AAGTGACTAT
19751 GGCCACATTA GATTATGCCT GCAACATTTT CTCTCTGGCA TCTTAAACAGT
19801 TCACAAAGGG AGTAGGATGG TACTCTTCC ATGAAGTGTG GCCACATAAA
19851 CAGATTTTAT GGAATCACAT ATTGACCTGG TAGCATATGT TTACATGAAT
19901 CAGTGTATCA ATATAAATAT ATTTTGTAT AAACCTCTTT TTAAGTTTIT
19951 TAACTTAATT TTTTCTTAC TGACTTGGTA AATTGAATGG CATGTATGAC
20001 AAATTGTGGA GGAAAAGATT CAGGAGTAGG CCACCATTTG CTTAGGTTT
20051 TTTTCTATT TACTAATATT TGAATTTAA CCAACATGT GCTTTAGATT
20101 GGGCATTAAC TTTTGGCCG TTGTGAAATA ATGAATGACG AGGTCAAATC
20151 TACTGAAGGT ATTTTCACTA CTTTGTGTCT GATCTTGAGG TGAAAATCCA
20201 ACTACGCTTG ATTCATAGA TATTTCTTGT TTATTTGTGC TTGGAGTCTT
20251 GAATGAAGGT GTTTTCAAGT AGGGCTGCAT CTTCGTCTTA GAGTAGTACC
20301 CACTGGGAGA CCATCTAAAA ATTATACTAA TTATCCCTG CACGTATCTT
20351 ATACTTATTT TAATGAGTTT CATAAGACAA GCAAAAACIT GAAAGAGCCC
20401 AAAAAATATCT GTTTTAGTGT GTGTATGGAG TCATAGTTGT TGAGCTTGAA
20451 AAAATGGTAG CAATCATTC TCCATAGAT TACACACTGG GTTTGTAAAC
20501 TGCACTAGGA GTGGCTGCAC AGGTAGGGAC AGGGGAGGTG GTAGGCTGGG
20551 AGAGACAATA TGTGGGGCTT GGGTCTCTCA TCCCTCTCAA CAAGAGCAC
20601 TTGGTCTCTG TCTGATTTGT AATTGCTTCT GTACAGCGGA GATAGATTTA
20651 TCACAATGTA AATGAGCTTG AGAGGCTCTT TATTTTGTAT TATACCTTCT
20701 GCAAGTTTAT CAGCTTCAGG ACCTCTTGT TCATTTGAAT GAAGGTGGA
20751 TAGCTAATGA GCTCAGAGG AAGACCAGAG GTGCCCTGGT TCCCAGGCT
20801 AGGCTTTTTC CTCTGTCTG TGTCTCTCT ATAAAATGTT GCCATAAGTG
20851 ACCGTGTCTG ATTTGACAAC ACCAAGCGGT TTCATCTCTT TTTTCTGT
20901 GTAGGAGAAG TTGAAGATGA ATTACTTCAT GCTACAGCA AAGTGTATAC
20951 ATTAGACATC CCTCTCTCA TGGTTGGCCT GGCAGTCTT GTGGCAGTAA
21001 CACTAAGTGT GCCCATTTG CTCTTCCAG TAAGTACATA AGACITTTGAT
21051 GAAAGAAACC TACTTGACC CATAAATTAG TACATGTGT CTACCTTCAT
21101 TTTGATTTAA TTATAGGGTG AGTTTGCAAT TGCAATGCC TGGGATATTA
21151 TTTTCTATA GCATTTTGAG TCACTTAAAA TTGGCCATTT AATGTGTAGA
21201 TAGAGCAAGT AGTTTCAAGT GGTATTTTTA TAGTGTAGGA AAAAAATCAT
21251 AAAACTTATT TTAAACTCA AAGTTGAAAA GTGGAGCTGG AGCTTCTGTC
21301 TTGTGGATTA GTAAACTGA GTAGGAGTTC ATATAACTTT GGAACCTTGA
21351 AAGCCAAAAC CATATTAAC TTCAAATCTT ATTAATTTT ATCAGATTT
21401 TGAAGCAATT TCATTTTTTT TCCAGTTTGT TGTGCTGCAA TAATATACAA
21451 AAGTTGCCCT TTTTAACTG ATGCCITGAA GGCTAATGAA AAGGGGATTC
21501 ATGTTAAGTA AATTATATAC CAGAAAAAAA TTTTCAAAA AACAGTTATG
21551 CTATCTATCA CATATCTCTC TCACACATGG CCTCTGCCAG ACTCACACCA
21601 GGTACCCCTT CCTGGCAT TGTATTTGGT GTCAAGTTGT TCTGAGATCC
21651 CAGAGCAGAG CTGGTAGTGA AGATTTGGGC TGTGTAGTT AAAACCACCA
21701 CCTAAGGATA AACACAGGTC TTCACCTTCC TGCCAGCTCC TGTTCATAA
21751 ACACGTAAIT TACTCATTC TTTGAGGGG AAAAAAATAA GTGACACAGT
21801 AACCAGCACT GTCTGGACA TAATGTTCCT TACAGGGCTG GCATATGAAG
21851 ACTATTTCTA TAATGACACT GTGGTCACTT TAAATGCAGC TTGTGTGCTG
21901 AAATATATT TGGCACATTC CTTTTCATG AGTGCAATGA ATCAGATCCG
21951 TACTACTATG GTGGCTAATA TTTTACTCTT AAATCATGTC TTGCCCTTAA
22001 TATATCTGAA AGTATTTTCA ATGACATACA CATAGCTTTA GCCTAAATC

FIGURE 3G



Docket No.: CL001010

Serial No.: 09/776,705

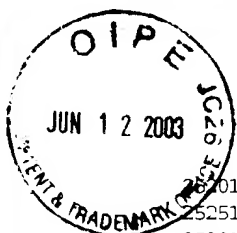
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

221051 AGCTCGTCT TGGGTACAAG ACAGAAGACA ACTATAAACA GAAGGTATAC
221101 GATAGGGTAA AATTGCCAGG CAAACAACCTT CACTGAGAAA AGGATATCTG
221151 GAGCCCTTCT TTTTATGTGT AAAAAATCA CTCCTAAAT TTTGGCACAG
22201 TGTAAAGCAT CACATCATGT TAGAATCAAA GCATAAGAAA TCTGTGATGT
22251 GCTTCGTAT TGTCTATTC ATATTCATAT AGTGTTTTCA AGCCATGGTT
22301 TTAAGGGATT GCCAGAATTG GCCATCGTCA CACAGACAGC TGGTAACAGT
22351 TCAACTAGTG CAGCTCATAG CCCAACACIG AGGGCTGCAA TTATGTTCAT
22401 GGGAAGTAAA AGTCATTTAC TGATGAACAT TTCACCTCAG CATGGAATAAT
22451 CCAATCTCC CCTTAGAAAT TCTTACCTTA TGTGAGAAAT AAAGCACTGA
22501 TATAAATCTG ACCATCAGGA ACAGCAATAG TGTGTAAACA TTAGATGCCA
22551 TTAGAACCAA AATTGACCAT AAGAACCAGA GTTCAGAAAA ATGACTAACT
22601 GCTGTCTTC ATTATGTATT TCCACTCAAC ATTAGCATTT ATGAAACATT
22651 TTGCACATTA TCCGTCTCTC ACCCTTGCAA TGTACATTT ATATAATCTG
22701 TGTAAGTGCT CCACTGCCCC ACAGAGTCAT AAGTCCCTGG GACTTGGTGA
22751 TGTGCACAGT GACTGGCACA GAGGGTGAC TCTGTCTGTC TTGGGAAGAA
22801 AAATGGTCTT CAAATGAATC TTGCCCTGTC TTGAAATGTA TAAACTGCTT
22851 TTTCTAGCAA AAGCATAGAC ACTCTTTCCC TTGGTGACAT GTGTACGAA
22901 TTCAGCTGGG TTGAGGATCT GGGCTAAATG AACCAACCT CCTATACAT
22951 GAAGATACA CAGAGATGGT GACAGAGAT GTTCACTTCC GTGAGTGGAT
23001 CTCATCTAAG TCCCTGAAG CTAAATTCAA TTTTCTTCT TTAATAAAT
23051 GATAAAGTGT GTTATGGCG CTTTGTCTTG TTTATTTGTT ATAACTTAGG
23101 GCTCAGATTT TCAATGTGTC AAATGCTGAC TCACAGCATG GTTCTCTGA
23151 CAGTTTATTT CATTTAAGGA ACTCTTCACC AGTAAGTTTA TTTACTTGCC
23201 TTGATATCTC CACACATTA TAATAAACT AACCAACCT AATCTGAATT
23251 AAAATCTATC AGCTTTAGGC ATTATTTTGT GTTCTCTTC TTTCAACATG
23301 GTAACTGGGC TCTCTTCTT AGGAGCTTGA GAAGATATGA CTGGGGTTTG
23351 TTTTCTCTTA CTTCATTTAT TATCTTCTT TTTTCCAATC AGGTAGTTT
23401 TTTCTTTT AGTAAAGGT GCATAGTAAC TGCCTGTAGT ATTGTGTAA
23451 CAAGTGAATA AATGAAATGA ATTAAAGTAG TGTTTTCACT AGCAGCCCAA
23501 CATTTCTTTC TCTCTTAGTA GTGGGTGGGG TATCAGTTAT GGAATGGCAC
23551 CTCCTTCCAG AGGACTGATC ATGTCTTTT CAGCTTATGC TTCCCTTTAT
23601 GCAGTAAAGT TTCCATATTT CCAATAAGAA CAAGAAACCA AATAATCTTA
23651 ATGGATATAT AATGAACACA CAGATGAAAA TTTCCCTGTC CATGCCTTTG
23701 AAAAAAGATC CCTAGCTACT TGTATTTTAT CTTATATTA AAATCAGTCT
23751 TTTCACTTAT GTTTCTTCA GATCTCTGT TTTGAAGTGT ATATAGATAT
23801 CAACATAGAA ATGCAGGTTA TATTGCTATC AACTGCAGTG GAGCAGTAT
23851 TCGTAGGTTT TCCAACATCC TTGCCCTAAG CAAACCTGCA AAATCAAAGT
23901 GTGAGCTACG TCTAAACAAT GGGAGAGGCT TTTTCTTTT TTTAAGAGT
23951 TAGAACTAAG ACTCTCACTT CCTCTGTGC CTCACATTT TTGACCTTCA
24001 CATTTGGGCC CTGCATCAGA ATACAGCACC CCTAACAGG CTCCTGTCTA
24051 GCACCTTTTC TCTGGAATA ACAGATGTTG TCTCTAGAGC TGCAATAGAAC
24101 CTTAATGGAA TCATTTGTGG TCAGAGGCCC TGGATGGTGC TGGGGACCTC
24151 CCTGACCCAC AGCATCTGAC CCACATTTCC AGGTTCCTAG CGACTTGTGT
24201 CAGTAAAGAA AAAGGCACAT AGCTAAGTGG AAGAGCAGAT GAGGCTTGGT
24251 GGGAAACAGC CAGTGGTCTG CCTAGCAAA GGTAAACAGA ACTGCTGGGG
24301 GCTTTTGTGC CTAGGCTCAC TACTCAGGGA GGCACCTTAA CATGGAATGA
24351 CCAGCAAGTT TCCCTCTGA TCTTTTCCAC CACCACCACA AGCCTAGTAC
24401 CTCCTCCCT CTTTGCTCTG TTGCTCTCTT CGGGAATGCA CTGGAAACCA
24451 CCTCAGTTC TGTTTGGAAT TTTCTTATTC CTTATTCAGA AAGAGGAAGA
24501 AGCTTTTGA TTTACTTCAA CCGTCTTACC TATTAATCCC ATAAACTTTC
24551 TGTGATCTCA TATCATTAGG CCAATGTITA ATCTTTCTGG GAGCCAGGAG
24601 ACTGCTTTCA CATTCAGAG CCTGGACAT ATAGGACTGC CTCTAACTCA
24651 CTCTAACTCA GCTTATTTGAC TTGAATGCAC CTTTTTAAAC AGTGACTAAA
24701 AAACAAACTG TGACTATTTCT CTGAAAATGA GCTATATCT CATACTTATT
24751 TATTCTGTGT AACACTGTGA AACAAATTA GTCCCTTGGC ACTATGTATA
24801 TACCATAAAA AGCTTATTTG TAAGCTACT AATTGGACCA GTTTTGACAA
24851 TATTGAATTA GCACTAATTG CAGATCATTA TGTAGAATTA TAGGCTGCTG
24901 AGGAAACAA TATCACACCA TTGCTTTCC TCAGTTTCTT TTTCAGAATG
24951 AGTTTCAATA TGTTCACATA TCCAATTTT AAAATCCTTT ACAAGATAT
25001 TCTTAACTA TTTCCAGAGA CTATCTGGTT TGTCAATCTA GAAATGAAAT
25051 TGCCTTTTC GCCTAAACAG ATGGCCTTAA TTTTGGTGG AGTGGTATGA
25101 AAGGAATGTC ACATGAGAAA CTGCAAGCTA TTATGCTTGA ATTTTGTGTC
25151 ATTCATACAT GTTTCAAAAT ATATTTTACA TTTTCTCTT TTTAAATGAG

FIGURE 3H



Docket No.: CL001010

Serial No.: 09/776,705

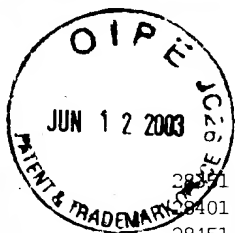
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/290

25201 TTCCCATCTC TGCACCTTAA GTGACTTCAG AACTAAAATT TTAAAGTGAA
25251 CATCAATCAC AGCATTTCCA AAAATGTGAA CTCTAGCTT AACCGAAGTA
25301 TTCACCTATT GGAAAGCTGA TAGAGTAATT CCACTAAGTC CAAAAAGTGT
25351 CCTCTAAAAG ATTCCAAAGA TAAGAGTGT TTCAACTTTG TCAAGCTGTA
25401 CAAACACAAA TGTCACTCCC TCCCCTCGCC CACAGGGATC TTTATCCAGT
25451 TACAGCAGCG TAACCTTGAGC AGCTGCTGCA AACTGAGGCT CTCTTGACCC
25501 TTGGCTACT TATTTGAGCT GCTAAAATAG GGCTGAAATC TGTCAAGGAT
25551 CCTGAAGGGA AGGATAAGAT TCCTACTATT CAATTTAATT TAAGCTTTTA
25601 TTCAGTGCCCT GCTGTGTGCA CAACACTAAG CTAGAAAGTC TGAGGAATGT
25651 TTAGATTATT AGGTCCCTGT CCTTGCCCTT CATAGATTTA CAATCTATTG
25701 ATAGGGAGAG CTAAAAAGGA GAGAAAGAGG AAGGAGCAAA CATAAAAACG
25751 TCAAAATTTT AAAATACCAT TTTAAAATTT TATTTTAAAA TGTTAAATAC
25801 CATGCAAAAT TAAGGAAAAC CTAGATTTCAT AAAAATTTCCT TTCACAACTC
25851 TGTGTAAATC AATTCACTGC TTGCCCTTAA TGTCTCATCC AGTCTGATGA
25901 GACATGTTTT GTGATCAACA AGGGTTTTAC TATGTTTTCT AATTATGTGT
25951 CTGTGCTGTT ATCTCTTTCT GACCGAGATT ATTTTAAACA ATAAATTCCTG
26001 AAAACTAAGA AAGTGAAAGC ATAAAATATT GTCTTATAAA ATACGCCAAG
26051 GAAAAAATGA CACTCCATTT CAAATATCAA AAGTTAGCAT CAAGACTGCA
26101 CAAGATGAAT GTACAGTCAT GTGTGTCTTA CAAATGTGGA CATATTTCTGA
26151 GAAATGCATC TTTAGGCAAT TTTGTCTATG TGCAAAACACC ATAGATTGTA
26201 CTGTGAGCCT AATTGGTGGG GCCTACTATA CACTAAGGCT ATATGGCATA
26251 GCTTAGTACT CCTAGGCTAC AAACCTGTAC AGCATGTTAC TGTACTGAAT
26301 AGTGGAGGTA CCTGTAACAT AATGGTAAGT ATTTGTGTCT CCAACGTAG
26351 AAAAGCTACT GTAAAAATAC AGTATTACAA CCTTAGGGTA TCACGTGCTT
26401 ATATGTGGTC TGTGTGTGAC CGAAATGACT ATGCTTAATA CCAGTGAAT
26451 GTACACTTAA AAATGGTTAA GATGGTAAAT TCTATGTTAT GTATGTTTTA
26501 TAATAATAAA AAAATTGAAA AAAGCATCAA CATCTTTTCT GGGAAAAAAG
26551 AAAAAAGAAAG AAAATGCATT AGAGTGATGA GAATATTTGA AGTAATAGAT
26601 AAAGTCAAAA ACAAGAAGAT GATCTTGCCCT TTGAACCTTC TTGTTTAAAG
26651 TTGTACATC AGTGATCACA CTGTTATTTT CCAAAAGACC CTTCAGCTGG
26701 ATACGACATT TCCGATGTC AGCTGTGCTT ATTGCACCTA ATAATGTCTT
26751 GGTTCATCCT GTGCCAACTA TAAATATCAT CTTCGGATTG ATAGGTGAGT
26801 TTCAGAAAGG CTTCATTTTG GTCAACCCAA ACTCAGGCTT CATTTAAATGA
26851 TGGACAGGGA ACCAGTGCTG GGTATCCAG ATCCCGTTT TTTCTCAGGC
26901 TCATGGATTG CCTTTATCCC TGCGAGGCTC TGGTGATTGA GCTGCTACT
26951 GTCTCTTCTT CCTAAGTAC ACTGGGAGCC ACCTTATAGG TCATTTAGTC
27001 AAGCTGCTTT TCTGATAGA TGAGGAACT GACCCCTATA AAAGTCAAGT
27051 CATATACCTT GGTGTGGACC CAGGATTTGG ACTTAGGTAT TAGCTCCACC
27101 ATCAGGAAAA GAGGAAGATA GATTTTACCT GCCAGAAGCT CTCTGATACT
27151 ACGAGTATCA GCTGAACATT GAAAGGTATC TTCAGAGGAA TAGGAGGTG
27201 ATTATATAAA GTGTATTATT AGTATTTCCC CATAACTGCA TGGTCTATTA
27251 ATTTTCATTC TACTCATTTA GGGTTTACTT AAACCTTAAA CACAATCTAA
27301 AACTTTAAAA GAACATGGG TAGGTACCTT GCAAGTAAAG AGGTGGATAG
27351 GGTGTGTGAT GAGTTACGCC ACCTTAGTAT GTATTTATAT TACTAATCCC
27401 CTGTAAATTT GTGTAAATTT CAGCCTTTTG TTGCTTATTA TATGTTCAT
27451 ATACTTATGC AGCTTTGATG TTAGGTACAT TTTAATTGTC TCTATAAACA
27501 TATCTTCTAT GAATAAATAA CCAAGATGAG CTATGTGAC TTAAGTGTGT
27551 GTTTTATAGT CTAAGTATAG GATAGCTTTA TATTTGGTTT ATTTAAAGTG
27601 TGTGCTGGCA TCTCCTTTGC TAGGAACTGC TGGGTAAAGC ATTGACCTTG
27651 CCTGTGTTTT GTCTTCTCAG GGGCTTCTTC TGCCACTATG CTGATTTTTA
27701 TTCTTCCAGC AGTTTTTTAT CTTAAACTTG TCAAGAAAGA AACTTTTAGG
27751 TCACCCCAAA AGGTGGGGT AAGTAAACCT TGCAATTTCC CCCATTTATA
27801 GTGTGTCTTC CAACTACTTA GAATAAACTA GAAATACAC ATAGTTTACA
27851 AAAATGAATC AATGTACAAG AACCAAAAAT CAAAAATGGG CTAGAACCTT
27901 CTGTGAGCAG AGAAAGGGGA CATATTTCTG AAACCTCAAAT GATTCTACTT
27951 CAAATATCAA ATATCCTGTG TTGAGTCTGT CATACATGTC AAATAGTAGT
28001 AGCCTTTCCC ACAGACACAT ATGCTTCAGG CAAATAGCAG TGTCCAATAC
28051 CAGCTGCTG TTGTGCTATC CGTGAAAAT CATGCAAGAA GGAATTAGGC
28101 TCCCTAGCCG TGTATGGA TAATTTAAAT ATTTTGGTCA TGGTGTGTAG
28151 GTTTGCAAG CCAAGGAAA GATGTTGCTT TTGTTTTCCC TTCCATAGTA
28201 CCTGTGTGCC CTGGTGTGGA CTAAGATCCA GAACAGAAC ATTCACTGTT
28251 CTGTAAACCT CTTTAGATAC AAAATACAGT CTTATTTAAAT TAGAGAGTAC
28301 ATATTTCTTT TCATAAGAC TACTATAGAA ACAAATGCTA GAAATAATTG

FIGURE 31



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

28441 TTTTTCACAT AAGGAAATAT TATCTTTCAC TCCTTAATAA AGTCATGTTA
28401 AGGCTTGAAA AGAATATTTT TTAAGTAATT ACTCTGAATT TTACCTTGA
28451 AGTCATTTAC CTTTGGGATG TTCTGGGGAC TTCAGGATAA TTTGGTATCA
28501 AAAGGTCCAC CCAGCAGCTT GCTCCCAAAT TTAACTCTTA TGTAGTCCGT
28551 CTGTGCTGGA TTTTTCACAG AGTGTGACCT TGGCAAATTA CTGTCTCTGT
28601 TTGTGACCTA TTTTCAGTTT GACCAATTGT GAAATGAGTA CAATATCTTC
28651 CTAGACCCAT TCTAGTGAAA AATGTTTAGT TGCTGCTTTC TTATATGTAG
28701 GATTAGGAGG TTAAAGTATG TGATAAAATG TAAGGCTCTT TCTGGTGTGA
28751 AAATGCTGAA GTATTTTATA TGTAGGTATG TACATATATC CTATATATAG
28801 TGTGTGTATA TTATATGTAT GCACACACAC ACACACATAT ATACACTTTT
28851 TGTGTCAACA TCTATTAAGC TTTTGGTTTT GTTTGCTTTA TAAAATTAGA
28901 ATCATATCAT ATATGCTATT CTTTTTTAAC CTGCTCTTTT TCACCTAAAA
28951 GATTGTAAAG ATTCTCTAGA TTATTTGAATC TTTTCTGTTC CCTTGATTTT
29001 TAATAATCAC AGGGTATTCC ATCATCTTGG TGTACTAAAT CAATTAACCTA
29051 TTAATCCATT GTTGAACCTG TAGGTGTATG CTCTCCACTG TATTCTCTTT
29101 CTTTCTTCAA CTAGGATTCT AAATTGACTG ATAGGTTAGG CCTGGGCATC
29151 TGAGATATTA AGAATAATAT GGCTCAATAT ATAGATCAGA TTGCCATATT
29201 ATGTAAACAA CTAATAAACAA AATTGTACTA AGTATGTTTT CTGTGCTCCT
29251 AACAGAGTCT CTCTGAATTA CAGGCTTTAA TTTTCTTTGT GGTGGGAATA
29301 TTCTTTAAGA TTGGAAGCAT GGCATCTATT ATAATTGACT GGAATTTATGA
29351 TCTCTCAAAAT TCCAAGCATC ACTAACACAA GGAAAAATAC TTTCTTTTTT
29401 TATTGAAAAT GGTACAAAGT TATACTCCAA AAGATATTTG AATTATCTTG
29451 ATTTGGAATGT TATTTCATAGG AAATAACAGG AAGATTCCAA AGACGTTTAC
29501 CAGTAATATC ACCAGGCACC TGCAAGAGAG GAAATCACTT GTTTTTGTCA
29551 AGGATGGTGT TGTATGTGTT TAAAAATAAA CCTGTGGTGC ACATTTCTAC
29601 CCAGGTTTTG CTAGAGCAGT GTGAGATGAT GAAGGTGTAT TTTTGTCTGT
29651 TTACGAGCAG AATAAGGTTA ACTGCATGTA ACAATCATCA GATAGTACTC
29701 TTTCCCTTGC CGTCTCTCA TCTTGCAACC CCTAAAAAG TACCAACAT
29751 TTGCAATCTC AGAACATCAA ACAAAAATGC CCTGGTGGCA AAGCTATCAC
29801 CATTTAATGT CTCTCTCAG TCTTGACCA AAGTCTCTGG TCTGTTTACT
29851 AACAGAGGCA AAAGGCATGT CTTAGGAAGT GTTTCTGTTT CTGTAAGGTA
29901 CATGAATGCT CAAACACCAG TCTAGAGCAT CTTATGTGTA ACAGCAAAAT
29951 AATATTTTGC CCACCTGTGT TGTGACATTT AGTTGTGACT TCTATATTCA
30001 ATAGATTTTT GTAAATGTGA AAACATCTAT ATTTAAATGT TAAACACTA
30051 AATATAGAGA GGGGCTTTAT TTCAATCATA GAGCAACAC AAAAAATAATG
30101 CTTATAGCTA AACTGCTGT TCTAGAAAGC ATCTGCTTTT TCAITGTATT
30151 CCTAAATCCT CTGTGATAC TTTTGTCTAT GAACAATGCT CTCTCTCTG
30201 TCTTCCATCT TCAITCAGAA TTTTGTAGAAG ACCCAATCG TGGAGATACA
30251 CTACCCAGTA TTGTGTGATA CATTTTTATT TGATAAACAT TCAGTGCAGG
30301 AAACGTGTAT TTGCTATATG TTATGTATA TAATCTTATT CTGTAGTCTT
30351 CAGAAATGTA ATGTAAAGTA CATTGTATT TTATTTTATA CATGTGTAGT
30401 TTTCTTTCTT CACAGTCAAA GCATTTATAT TATTGGGGGT GGGGCGAGG
30451 AATTAAGTTG GTGGGCTCGA AAATCCATTC ATATGTATCT GTCTACAAAT
30501 GTCTGGGGT AATTTAAATT TGAAACCTAA GTTATATATA GTTTGGCAAT
30551 GCTCTTCTTC AATATTTACA ATAATAGGAT GATCTACAAG AAAATAAGTT
30601 TCTTTTGTGA AATTTTATC ATACTAAAGT TGTCTTTTGA ATTTAGCATA
30651 TCTAAATAG GAATTAGTTC AGTTTAGCTC ACACAGGTGT TTGCTGACAT
30701 TCATTGGCCA TTAAATACAG TGTGTAGTGG TTCTCGTAA AAGTATAAGT
30751 GCTAACACTA CGAAGAAATG CACACGATCA TTCTTGCTCA CTTCTATAAC
30801 AAACCTACAT AAAATGGATT TAAAAATTC TACTCACAGC CTAACACTTC
30851 TGGAGTTCAC TACCTTTTTT TCAATCATA GTAAGATCAC TTGTGTATTT
30901 TATATTTTAG TAAAGCCAAT TATGAAGTAC AAGTATCATA CACGTACTTT
30951 TGAGCTACTA TTATTTGAAA AAAATCTGCC AAATAGCATC TTTAGGATAT
31001 ATTTACATTT TCACTCATCT AAAAAATATA CAAAAATAAA AAGTGGAAAA
31051 AGGTATCTTC TGAATGTGTA AGAGCATCCT ATAGTGCCAA ATAATAAGC
31101 ACCATTTTCT TCTTCATAAC CAGGATTAAA ATTCTATAT ACTGCAAGGC
31151 AGACATACAT ATGATAGCTT GTGCTGATTA ATTTAACCCC ATTTGTAAAC
31201 AGATGAAAT TTATTTTCTT TATTTTCAATT ATAAGATGGC TCAATGTATT
31251 GGGAGCTTCT TTTTATATTA CAGAAAGTGT ATATTGGTAT ATAATAAATG
31301 AACTTTTCAT ATGACTATGA TGTGATTTT GATCTATTGT TAAAGATGT
31351 TGTGTATTTT GTCCATGAAA CAAAATTTAA AATCCAAATA CTGTCTTTCT
31401 TATATTTGTT TATGTTCCAT TTTCATTTGT ACCTTTGACA CATACTAAC
31451 ATCTATAGCC ATCATCTGA AAATAATTGC CATCTTATTT TGGCAAAATA

FIGURE 3J



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2005
TECH CENTER 160014

31501 GATATTTAAT CCTAAATTAT TATGATGATT ATAATTTTGG CATCACATAT
31551 ATACCACCTA GAATGAATGT GGAAGAAATG AGTCTTTTAT GGTTAGTTTG
31601 AAAGAATCCA TTGAAGATAG AAAATGAGAG AATAGAAGAA ACCTGAGAAT
31651 AGTAAATATA AGAGCAGAGA AAATATGGGG GCAGGGAAAA CATGTGAGTG
31701 CTAAGGATTG ATTATGAATG AACGATTAGG GGGATTGATG GATCACAGGG
31751 TAAGTATATG CTTAACTTTA TAAGAAACTT CCACATAGTT TTCCACAGTG
31801 TTCTACCAT TTTCATTTCC ACCCGTACTA CCTACAACCT CCACGACTC
31851 CACAGCCCTG CCAACATTTG GTGTGTCTTT TTGCATTTTA GCGTTTCTAG
31901 TGGGCTGAA ATGGTAACTC ATTGIGATTT TCATTTCTGC TTCTGTGACA
31951 ACTAATGTTG AAAACTTTTC AAGIGTTTAA TGGTCACTCA TATATCTTCT
32001 TTGTGGAAGT GTGTATTCAA ATCTTTTGCC CATTTTITAA ATTTAGGTTA
32051 TGTGTTTTTA TTGGGATTTT GTAGAAGCTC TTAAATAATG GATCCATGTC
32101 CAGATGCCA ATATATTTTC CCAGTCTATG GTATGGTTGC TTATTTTCCT
32151 AAAGGTGTCT TAATTACATC TTCTGGGGC CAGGTACCA TAGCTCAAAG
32201 TTTTGCAATT TATGTCTTAA TGAGATAATA TTAATCAGAG TGGTATAGTC
32251 AAAATTAATG GTTTTGATGT CCTGGGCCA TATAGGTAGG ACTGGATCAT
32301 CTAACCAAGA TGCAAAAAA AAAAAACAAA AAAACAAAAA TAGTACTTGG
32351 AAAAATTAT TTAAATTAA ACA (SEQ ID NO:3)

FEATURES:

Start: 3000
Exon: 3000-3118
Intron: 3119-7452
Exon: 7453-7543
Intron: 7544-8039
Exon: 8040-8155
Intron: 8156-10894
Exon: 10895-10968
Intron: 10969-11437
Exon: 11438-11530
Intron: 11531-16047
Exon: 16048-16129
Intron: 16130-16215
Exon: 16216-16298
Intron: 16299-16408
Exon: 16409-16467
Intron: 16468-17301
Exon: 17302-17577
Intron: 17578-17709
Exon: 17710-17789
Intron: 17790-19073
Exon: 19074-19174
Intron: 19175-20904
Exon: 20905-21029
Intron: 21030-26649
Exon: 26650-26794
Intron: 26795-27670
Exon: 27671-27768
Intron: 27769-29273
Exon: 29274-29372
Stop: 29373

CHROMOSOME MAP POSITION:

Chromosome 12

ALLELIC VARIANTS (SNPs):

DNA				Protein		
Position	Major	Minor	Domain	Position	Major	Minor
1386	T	C	Beyond ORF(5')			
2594	T	C	Beyond ORF(5')			
2757	G	T	Beyond ORF(5')			
6107	C	T	Intron			
6392	T	C	Intron			

FIGURE 3K



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2

9484	C	G	Intron
10280	A	G	Intron
10297	G	A	Intron
10331	G	A	Intron
10536	T	C	Intron
11548	T	C	Intron
11917	G	T	Intron
12840	T	-	Intron
12844	A	-	Intron
12847	T	-	Intron
13019	C	-	Intron
13022	A	G	Intron
13285	G	A	Intron
14461	G	C	Intron
15464	-	G	Intron
15469	-	A	Intron
15545	T	C	Intron
16199	T	C	Intron
16798	T	C	Intron
18103	C	T	Intron
18421	A	G	Intron
18528	G	A	Intron
18722	T	C	Intron
18775	C	G	Intron
18951	T	C	Intron
18974	T	G	Intron
19540	A	C	Intron
19841	G	A	Intron
20170	A	C	Intron
20343	T	C	Intron
20519	G	A	Intron
20963	T	C	Exon
21840	G	T	Intron
22783	C	T	Intron
22787	G	A	Intron
22825	T	C	Intron
22967	A	T	Intron
23248	A	G	Intron
23764	G	T	Intron
23765	C	T	Intron
24432	A	G	Intron
24538	C	G	Intron
24693	T	C	Intron
24819	C	T	Intron
25743	C	T	Intron
26044	G	C	Intron
26555	G	A	Intron
27886	A	C	Intron
31884	T	C	Beyond ORF (3')
32229	T	A	Beyond ORF (3')

411 P P

Context:

DNA

Position

1386

ACCCATATGCAATGCTTACCTTCTATTCCTCTTAGCTTTTAACTGCTTCCTTCATCTT
TTATGATATATACATTTAGGCTGCCCTATATTAATAATAGTTTCATTTTGTTCCTCCTGC
TTAAACACTGIGTGCTATTTTAAATTCCTGAGAACTGCTTCTTTATTTCTAGACAA
TTCTCTGCCATATCTCTTCTGTTTGTCTCACTTGTCTCACAATTCCTATATTGG
AATGACTATCAGTGATATTTGAACCTGTAAATTCCTATTTTTCCTTCTCTTAACT
[T,C]
CTTATTTGTATTTTCTTTTAACTCTCTCATGCTATAATTTGAGTGATTTCACAGA
TCTGTCTTTCATTTTATAAGCTCTCTTCAGCTGAGTTTAAATTTCAATGATTCT

FIGURE 3L



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- (SEQ ID NO: 24)
- 2594 CTGAACCTTCTTTTGTACTATTCTTAACCTTGGCTTCAGGATCAGTGCCTAGAAAGT
TACITCCTAAACCTTGATCCTCACTATGTTGCATATTATCAAGCATTGGTGGTGTAAAT
TCTTTTCATGTCCAAATTAAGTAAAGCAGTAATTTCTTTCTAGTTATTGCTAGTAGAGAC
ACTGGTAGATTCTGCTTGGTAGACCTTCTCTGTCAACAATTTACTTTTGTCTTCTTT
CTTTTAAACATGTATCCCACTCACAATACCTAAATTTCTTGAAGACTGCTGCCATGT
[T, C]
TTAAGATTCTTTTTTTTTTCCATAGTACTAGTAAACCTGCCATTTTCATTATACATAG
GCACCTATATAATATCTGCTAATTTAGCAATTATTAGTAATTTCTTTCTCTCTTCCAT
TCTTTCTCTTTCTTTGATTGGGTAAAGGAACATTTCAAGGATTGCTTATGTAAAGTTTCA
GGAGTTTCTTTCTTCTTCTTCTTTTACAGAGAGCATACAAATGTAGATGATTCTATTT
ACTTATTTCATTAAATAAAATATAATGATGTATGTGTGTCTGTTTGCAGAACAGAG
(SEQ ID NO: 25)
- 2757 TTATGCTAGTAGAGACACTGGTAGATTCTGCTTGGTAGACCTTCTCTGTCAACAATT
TACTTTTGTCTTCTTTCTTTTAAACATGTATCCCACTCACAATACTAAATTTCTTT
GAAGACTGCTGCTATGTTTAAAGATTCTTTTTTTTTTCCATAGTACTAGTAAACCTGC
CATTTTCATTATACATAGGCACCTCTATAAATATCTGCTAATTTAGCAATTATTAGTAAT
TCTTTCTCTCTTCTTCAATTTCTTCTTCTTTGATTGGGTAAAGGAACATTTCAAGGATT
[G, T]
CTTATGTAAAGTTTCAAGGATTCTTTCTTCTTCTTCTTTTACAGAGAGCATACAAAT
GTAGATGATTCTATTTCACTTATTTTCAATTTAAATAAAATATAATGATGTATGTGTGT
CTGTTTGCAGAACAGAGTGTCTGAACATCAACACAAGTGAAGAACCTTAAGCTGAAG
GTACAGTATATTATTACACTGAAGGGCTTGTGTGTGACAAGAAAGCGCTGACAGCTC
AAATGGATCCCATGGAAGTGAAGAAATGTCAACATCGAACCAGATGATGAGAGCAGCAGT
(SEQ ID NO: 26)
- 6107 GTTTCGTGTGCTGTCTTCTATCTACATCTCATACGTCTTCTATTCTCAAAAAGTAAACCT
GTCTCCTCTTTCTCTCTCCAGATTATTTTCAAGGATTAGCTTCTGTATATAAAAATAGCTT
GTACAGATCTCTTACAATAATTTATTTCTATTTTATTTCTAAGGTTTATTTATTTATTTA
TTGACAGACAGAGATTCTCACTCTTGTGGCCATGCTGGAGTGAATGGTGAATCTCGG
CTCACTGCAACCTCTGCTTCCAGGTTCAAGCGATTCTCTGCTTCAGCTCCTGAGTAG
[C, T]
TGGGATTACAGGCGCTGCCACCACTCGGCTAACTTTTGTATTCTAGTAGAGACGA
AGTTTCAACATGTTGGCCAGGCTGGTCTTGAACCTCTGACCTCAAGTTATCCACCCACCT
CAGCTTCCCAAAGTCTGGGATTACAGGCGTGAGCCACTGTGCTGGCTCTAGGATTAT
ATTAAATAGAACAATCTTCAATTTATTTATCTTTCTTTATCTTTCTTTTATGTAGGAAAT
GTCTTAAATTTTCAAAACCTCAATTTGAAAGCACTTTTAAATCATACATAGTGCAGCA
(SEQ ID NO: 27)
- 6392 CAGCTCCTGAGTAGCTGGGATTACAGGCGCTGCCACCACTCGGCTAATTTTGTGA
TTTCTAGTAGAGACGAAGTTTCAACATGTTGGCCAGGCTGGTCTTGAACCTCTGACCTCA
AGTTATCCACCCACCTCAGCTCCTCAAAGTGTGGGATTACAGGCGTGAGCCACTGTGCC
TGGCTCTAGGATTATATTAAATAGAACAATCTTCAATTTATTTATCTTTCTTTATCTTT
TTTTCTATGTAGGAAATGTCTTAAATTTTCAAAACCTCAATTTGAAAGCACTTTTAAAT
[T, C]
ATACATAGTTCAGCATTTTATATAAAACAACTAAAGTCTGTGACATTTTGCAGTATA
AAAATGCAATGGCAGCAGGAGGCTTATTAATTGAGCTCTTGGAAATGTGGCTGGTCTT
AGGTCCGTAGCTTCAAGGCGCTGGCTGTAACTGCAGGAGCTGACCAGCAGCTCTAT
AACCAGTGTATACCTTTCTAGCTGTGTCCAGAAACAGAAATCACAACGCTCTGTGG
ATAGTGACATCTTAAAGTTTCTTTCTTCTTCCCACTCTTTTGGCAGTTCAATTGAATTGCT
(SEQ ID NO: 28)
- 9484 GCAACATTTATATCACAATATGTGCTGTTTATGTTCTGAATATCACATATGATTAGTAA
TCACACAGCTATTGTAGGGCTAAGCATCAGGACTATAAATATTTGTATGTGTGTAGTGT
TTGATTGAACCTTTTATGTATAATATCTTTCAGCTGAATGGGTTTTATATCAACTTTA
CTTTTATATAAGCCATGTTTGAATAACTAGGATTTAATAATCTGAATTTTAAATAGC
TATGTATGTAGTATATATTGTATGCTTTGTAAATGTGCTTACCTCTAAGCAAAAAA
[C, G]

FIGURE 3M



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH-CENTER 1600/26

- CTGCCCTTCCTTATTAAATATACATACCATTAATAATGAATTAGGAAGTTACAGATCACTG
ATGAATAGAAATAGGAAAAACITCCCCCAATCCACAGTCATAGATCATCTTCATGAGAG
AAGAATGTTCCACTTTTAAAAATGAGGGCTCATTTTAGGCTTATAAACACTTAGCAGAT
GAAATTGGTCAGAACAAATTAATCACTAAACATCATGGGGTGTGTTTTGTGTGTCTAAGT
AGCCCACTGGATTAAAGCTTTCTCTCTTAATTATAGCAAGTGACACAGTATTTTAAAG
(SEQ ID NO: 29)
- 10280 ATAAGAGTGCAACATAGCTACAGGGGTATATAAAATTTATAATTTCATGGTCCAAATGTACA
TTTGTAGTATTGATTTTCATTGGGAATTACCAAGGGATTAGATCAATTGTGGGAAAGTGT
ATTTTTTAAAAATAAACAAAGATAAAGATTTTTTTTCTGAATTCAGGTAAAAGGCAGCA
TTGCTCCTCATTTATATAGTAGATGCTTCTATCAACATCTTATTTTGTGCTCCAAAT
CTTGATTTTGGAAAAATACCAATCCGTATAAACATAAAGAAACCATACATGTCATGTGGG
[A, G]
TCTTAACACCAGAAATGACTCTGAATGCAAAAAAAAAAAAAAAAAAGGAATTTTC
GTGCCCCATCTTAGCTTTCTCTGCTTTCTCTATTATATATGCAACTGCCCTGCCCTCTA
TCTTACAAAGTACTTCTTAATCTAATGCACAGGATCAGCAGTAATGCAGCTCAGACTGCA
TGCTTTGCGCTTTGGATTCTTAGATTTTCAAGTTAAGGTTTAGTCAGGCTATTGAATAGCC
CTTCAATTTCAAGTGTCTGATGTGAATATCATGCAATATGATGTACATATTTCCCATGTGC
(SEQ ID NO: 30)
- 10297 CTACAGGGGTATATAAAATTTATAATTTCATGGTCCAAATGTACATTTGTAGTATTGATTTT
ATTGGGAATTACCAAGGGATTAGATCAATTGTGGGAAAGTGTATTTTTTAAAAATAAAC
AAAGATAAAGATTTTTTTTCTGAATTCAGGTAAAAGGCAGCATTTGCTCCTCATTTATTT
ACGTAGATGCTTCTATCAACATCTTATTTTGTGCTCCAAATCTTGGATTGGAAAAAT
ACCAATCCGTATAAACATAAAGAAACCATACATGTCATGTGGGATCCTAACACCAGAAAT
[G, A]
ACTCTGAATGCAAAAAAAAAAAAAAAAAAGGAATTTTGTGCCCCATCTTAGCT
TTCTCTGCTTTCTCTATTATATATGCAACTGCCCTGCCCTCTATCTTACAAAGTACTTCT
TAATCTAATGCACAGGATCAGCAGTAATGCAGCTCAGACTGCTATTTGCGCTTTGGAT
TCTTAGATTTTCAAGTTAAGGTTTAGTCAGGCTATTGAATAGCCCTTCAATTTCAAGTGT
GATGTGAATATCATGCAATATGATGTACATATTTCCCATGTGCTGAGTAAGTAGATGTAG
(SEQ ID NO: 31)
- 10331 AAATGTACATTTGTAGTATTGATTTTCATTGGGAATTACCAAGGGATTAGATCAATTGTGG
GGAAAGTGTATTTTTTAAAAATAAACAAAGATAAAGATTTTTTTTCTGAATTCAGGTAA
AAGGCAGCATTTGCTCCTCCATTTATTACGTAGATGCTTCTATCAACATCTTATTTTGT
GCTCCAAATCTTGGATTGGAAAAATACCAATCCGTATAAACATAAAGAAACCATACATG
CATGTGGGATCCTAACACCAGAAATGACTCTGAATGCAAAAAAAAAAAAAAAAAAAAAA
[G, A]
GGAATTTTGTGCCCCATCTTAGCTTTCTCTGCTTTCTCTATTATATATGCAACTGCCCT
GCCCCCTATCTTTACAAAGTACTTCTGTAATCTAATGCACAGGATCAGCAGTAATGCAGCT
CAGACTGCATGCTTTGCGCTTTGGATTCTTAGATTTTCAAGTTAAGGTTTAGTCAGGCTAT
TGAATAGCCCTTCAATTTCAAGTGTGATGTGAATATCATGCAATATGATGTACATATTT
CCCATGTGCTGAGTAGATGTAGCATTTGCTAATGTTGCTATACATTTAGCATCTAA
(SEQ ID NO: 32)
- 10536 TACCAATCCGTATAAACATAAAGAAACCATACATGTCATGTGGGATCCTAACACCAGAA
TGACTCTGAATGCAAAAAAAAAAAAAAAAAAGGAATTTTGTGCCCCATCTTAG
CTTTCTCTGCTTTCTCTATTATATATGCAACTGCCCTGCCCTCTATCTTACAAAGTACTT
CGTAATCTAATGCACAGGATCAGCAGTAATGCAGCTCAGACTGCATGCTTTGCGCTTTGG
ATTCTAGATTTTCAAGTTAAGGTTTAGTCAGGCTATTGAATAGCCCTTCAATTTCAAGTG
[T, C]
TGATGTGAATATCATGCAATATGATGTACATATTTCCCATGTGCTGAGTAAGTAGATGTA
GCATTTGCTAATGTTGCTATACATTTAGCATCTAAGTTATGAACCAGATTTCTACCACTGG
GTAACATTAAGAAAGTTAGGGACTTCAGGTATGTAAAATATAGCAATTTCTATTTCTA
CGACTTTAAGGGTATGTGTAGAGTTCTGAAAAGAAATTTCTCAGCTCCCCCAATCCAC
ATACATTTTGAAGCTGATGATTGAAAAGATTAATGTGATCCTTTATTTGAACATCTAAC
(SEQ ID NO: 33)
- 11548 ACCATGTATCTTGTGTGGAGAACATTTTGATATATTGCTTATTGGTTTTTGGAGTTGCA
TCTTTTGGGCTTATAAATTTCTATATGATGTTTATTTACATGTTTGGAGCTCCAGCATGGA
ATATATAGACAAATATTTTGTGATTAATAACCAATCTCTTTAACAAGGCTATTTTATCT
TTGATGTAGGGTCTTTGATTTATGAAAATTAGGAGAAAGGCATTTGGATGGCCGGGA

FIGURE 3N



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- AAAATGGAGCTTTTGTTCATTCACATGCAGAACATGGAGGTAAGGGATATACTTT
[T, C]
CAATGGATCCATAAACTTTCTATAGCGTGTTCATAAATAAGAAAACCTTATGGCAATAA
ACAGGCACCTTTAGATACAGAAAAATGCTACTTATAGTTCCTTAAATTTTAAATGATAGT
TTCTTAAATAGGTTTGTGTCTGCTTTAATTAACACAGCAATATCTAAGAATGAAATAA
CATATAAAACCCCTGCCAATTGAATTCAGAAATTAATAATAAAATAAAGCTTTCTTGAT
TTTTAATGTTATATAGCATGAATTATTACTCTTAAAAATGAAGAATTTGTGCTTATAT
(SEQ ID NO: 34)
- 11917 TTTAGATACAGAAAAATGCTACTTATAGTTCCTTAAATTTTAAATGATAGTTCTTAAA
TAGGTTTGTGTCTGCTTTAATTAACACAGCAATATCTAAGAATGAAATAACATATAAA
ACCCCTGCCAATTGAATTCAGAAATTAATAATAAAATAAAGCTTTCTTGATTTTAAATG
TTATTATAGCATGAATTAATTACTCTTAAAAATGAAGAATTTGTGCTTATATCTGTCAIT
GACAAAACAGTTGACGTTTCTATGTGTGACTGAGTTGATTTACTAAACTGAAAAGTGG
[G, T]
TGTCTGGGGGAACATAGCCAAATGCTGTGGTCTTTGAAACGACGCTGCACCTGAGCCAGC
CCACTAGACAGTGTCTCTGGAAGTTTACTAAGGCAAAAGTCTGGCTAGGCATCAAATGCA
CTATAAACCCCGGTTTGTGATTCCTATGGATTCTTATAATCCCACTGAATATCATTTTC
CAGTGTAGGACCTAGAAATATATATATATATTTTAAACAATGTTCTCTGTTGGTGTGTT
TGCCACACAGCTTCATCTGTTCTGTGTGTCTTTGGCCCTCAGAAGGCATCCAAACCC
(SEQ ID NO: 35)
- 12840 GACTATTGCAGTAGTCTTCTAACTGGTCTTCTGGCTTGAGTTTCCCTGCTCTCAGATA
AACTCTAATTTGTCTCCAGATAAACTTTCTCAAATTTGAGTCTGTTCTACTTTTGTGCG
TGCAATAAATCTTTCAGCATGCCCTTATTATTTTCAAGGAAAACTTAACTCATTTGGAC
TGACACAAGATCTTGTCTAGTCTTCTGCTCAATCTTCTTAACTTTCTAGCAATGCC
CATATCTATCTATCTTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATC
[T, -]
ATCATCTATCAATTTATCCATCATCTATACCCATCATGTCTGTGTCAAACCATATAACAAA
TTATATTTATTTCCCTTAACAGTACTATTTTAAATATTTTAAAAATCATCCATGCCCTCTT
TTCAAGGCTACTTTCTCCCTTGACTGTCTCTCAAAGTCTCTCAACCTTAACACACACG
CACACACACACACACACACACACACACACACATTTCTCTCTCACTCTGCTCAC
CTGGTCTATTTGCTCTCTCTAGACTGGTAAATACTAGTTCTCTGGGCTCTCATGGTCTGT
(SEQ ID NO: 36)
- 12844 ATTGCAGTAGTCTTCTAACTGGTCTTCTGGCTTGAGTTTCCCTGCTCTCAGATAAACT
CTAATTTGTCTCCAGATAAACTTTCTCAAATTTGAGTCTGTTCTACTTTTGTGCGTCA
TAAATCTTTCAGCATGCCCTTATTATTTTCAAGGAAAACTTAACTCATTTGGACTGAC
ACAAGATCTTGTCTAGTCTTCTGCTCAATCTTCTTAACTTTCTAGCAATGCCATA
TCTATCTATCTTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATC
[A, -]
TCTATCAATTTATCCATCATCTATACCCATCATGTCTGTGTCAAACCATATAACAAATAT
ATTATTTCCCTTAACAGTACTATTTTAAATATTTTAAAAATCATCCATGCCCTCTTTTCA
CAGGCTACTTTCTCCCTTGACTGTCTCTCAAAGTCTCTCAACCTTAACACACACGCA
CACACACACACACACACACACACACACACATTTCTCTCTCACTCTGCTCACTGG
TCTATGTCTCTCTAGACTGGTAAATACTAGTTCTCTGGGCTCTCATGGTCTGTGTGT
(SEQ ID NO: 37)
- 12847 GCAGTAGTCTTCTAACTGGTCTTCTGGCTTGAGTTTCCCTGCTCTCAGATAAACTCTA
ATTTGTCTCCAGATAAACTTTCTCAAATTTGAGTCTGTTCTACTTTTGTGCGTCAATA
AATCTTTCAGCATGCCCTTATTATTTTCAAGGAAAACTTAACTCATTTGGACTGACACA
AGATCTTGTCTAGTCTTCTGCTCAATCTTCTTAACTTTCTAGCAATGCCATATCT
ATCTATCTTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATC
[T, -]
ATCAATTTATCCATCATCTATACCCATCATGTCTGTGTCAAACCATATAACAAATATAT
TATTTCCCTTAACAGTACTATTTTAAATATTTTAAAAATCATCCATGCCCTCTTTTCA
GCTACTTTCTCCCTTGACTGTCTCTCAAAGTCTCTCAACCTTAACACACACGCAACAC
ACACACACACACACACACACACACACACATTTCTCTCTCACTCTGCTCACTGGTCT
ATTGTCTCTCTAGACTGGTAAATACTAGTTCTCTGGGCTCTCATGGTCTGTGTGTATC
(SEQ ID NO: 38)
- 13019 CTGACACAAGATCTTGTCTAGTCTTCTGCTCAATCTTCTTAACTTTCTAGCAATGC
CCATATCTATCTATCTTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTAT

FIGURE 30

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

CTATCATCTATCAATTATOCATCTATAACCTACATGTCTCTGTGTCAAACCAATAACA
AATTATATTTTATTCOCTAACAGTACTATTTTAAATTTTTTAAAAATCATCCATGCCCTTC
TTTTACAGGCTACTTTCTCCCTTGACTGTCTCTCAAAGTCTCCAAACCTTAACACACA
[C, -]
GCACACACACACACACACACACACACACACACACATTTTCTCTCTCACTCTGTCTCA
CCTGGTCTATTGCTCCTCTAGACTGGTAAATACTAGTTCTCTCTGGGCTCTCATGGTCTG
TTTGTATCTAGTATGTTACTGTTTCTTAAAGGATATTTTAAAACACTTGAGTAGAGAATA
AGCTTTTGGAGTCTGATGGAACCTGAATTTGAGTCTGTTTCTGTCACTATCTGTGAACTTC
GGAACATCATCTGACTCCTTTGTCTGATTTTTCATGTATAAAAATACCTTACAAAGGC
(SEQ ID NO: 31)

13022 ACACAAGATCTTCTGCTAGTTCTTCTGCTCAATCTTTCTAAACTTTCTAGCAATGCCA
TATCTATCTATCTTTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTATCTA
TCATCTATCAATTTATTCATCATCTATACCCCTACATGTCCTGTGTCAAAACCAATAACAAT
TATATTTATTTCCCTAACAGTACTATTTTAAATATTTTAAAAATCATCCATGCCCTCTTT
TCACAGGCTACTTTTCTCCCTTGACTGTCTCTCAAAGTCTCTCAACCTTAACACACACGC
[A, G]
CACACACACACACACACACACACACACACACACATTTTCTCTCTCACTCTGCTCACT
GGTCTATTGCTCCTCTAGACTGGTAAATACTAGTTCTCTGGGCTCTCATGTTCTGTGTT
GTATCTAGTATGTTACTGTTTCTTAAAGGATATTTTAAACACITTGAGTAGAGAATAAGC
TTTTGGAGTCTGATGGACCTGAATTTGAGTCTGTTTCTGTCACTATCTGTGAACCTGGGA
AGATCACTGTACTCCTTTGTCTGATTTTTCATGTATAAAAATTACCTTACAAGGCTAT
(SEQ ID NO: 40)

13285 ACTGTCCTCTCAAGTCTCTCCAAACCCCTAACACACACGACACACACACACACACACACACACACACACACATTTTCTCTCTCCTCTGCTCCTGCTCTATGTCTCTCTAGACTGTGTAAATACCTAGTCTCTCTGCGCTCTCATGTGCTCTTTGTATCTAGTATGTCTACTGTCTTTCTAAAGGATATTTTAAAAACCTTGAGTAGAGAAATAGCTTTTGGAGTCTGATGGACCTGATTGTGAGTCTGTTTCTGTCTATCTGTGAAGCTGGGAAGATCACTGTACTCTCTTGTCT[G, A]ATTTTTTTCATGTATAAAAATTACCTTACAAAGGCTATTGTGAGGATGAAATAAGGTAACATATGGCACAATAAGTGTCTGTATATGCTTCTCTCTCTCTGCTCTCCATAATCCATGTCTCTGGAGTCTGCTGAATATTTTTTAAATAGGCATTTAAAAAATTATAAAACAAATATATGATGATTGTGAAAAACTAAAACTGCATAAATATATAAATTACCAAGAAAAATTATGTCTGATCTCTCAGAAATACTACTCATAGGTTTTCCCTATGCTTAATTCAA

(SEQ ID NO: 41)

14461 TATCGAGCATTTTCATAGGATTGCCCTATAGTTGGTCTAATTTTAACTGAAATAACCGAG
GCATAAGCATTAATTAAACCTGGACTCAAGAAGTTGAGTGGCAGCACCTCAGCTGTGGTTC
AAAGCATAGCCACTACTACGCTTCTTAAACATGGAATAAAGTATTAAGGCGGTCTCTCAGT
CAAGCCTCACACAGGTAAGAGGCGTGACTTTAAGGGAGTAAGATCAATATCGTTAAACATC
ACCCAGAAATAATGCTCTCCTCTTTGGTTACTTTTATTGTAGTTGATATTGGCATAA
[G,C]
AGAAATCATTGTATTTCTCTATTTAACAACTCTACATTTAGAACACTTAATTTTCTCAA
TCCCTTAAAAAATTAAACATTTACTGCAGATGTTTTACATTAAACAGATTAAATGTCTGGAT
CATTTCTGAATTTTGAAGACCAAACATGTTAACATCCTGACATCCTGTAAGAACAGCAA
TTAATAGCTGTAAACATTGAATGGTAACCTCACCAAGCCAGCTAATCAGAAATATCTCTCTGT
GTTACACTCTGTGAAGATTTAGCTTTTAGCCCAAGGCTTTTGAACGATTAACCAAAATAATG
(SEQ ID NO: 42)

15464 TGAGTTCATTATTTTAACTGAATCTTTTGGCCATGTGTCAACAAATTAACGTTATCCTTCA
CCAAATGGGTGGGCTTGAAAAAGCGGTGATGCATAAATATTTACAGTTGTAGGCAAAAT
GTAATGTTATGTATATGAATACATATTATTATTTTTCAGGGAGAGGCTGTGATGATTTTCAT
CAAGAAATCTTTTCAACAGAGTAGATAATCATTCATGTATCACTTACCTTAGATGTCATGA
AATTTTGCCACTTTATATATAATTCCTTAGTTAGCCAAAAGGAGAGTAAGATGAAGAGGGG
[- ,G]
AAAAAAAAAACTTCTTTGACAAAGATGGAGAGAAGCTGTCTCTTGTATTCTTTTATC
AATCCAGGAAGCCTTTGGTTTTGACAATAAGTGGTCTGAGACTTTGTGTACTCCTCAGAT
AGGTCCCGGAGGACTAGATTGGTGGCCATCTGTCAGAAAACAGAGGGGATATATTGACTC
TGCAGATCTGCCCTTTGATTCTGCCATCTCTCAGCTGGCCCATGCCCTTTGTGTCAGAC
TACTGCCCAAGTTATAGACTAACACAGGCACACTGAGTATGCGCTATGTTGATTATA
(SEQ ID NO: 43)



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- TCTATTTTAACTGAATCTTTTGGCCATGTGTCAACAAATTAACTGTTATCCTTCACCAAA
TGGGTGGGCTTGAAAAAGGCGTGATGCATAAATATTTACAGTTGTAGGCAAAATTGTAAT
GTTATGATATGAATACATATTCATTTTTCAGGAGAGGCTTGTAGATTTCATCAAGA
AATCTTTCACAGAGTAGATAATCATTCATGTATCATTACCTAGATGCTCATGAAATTT
TGCCACTTTATATAATTCCTTAGTTAGCCAAAAGGAGAGTAAGATGAAGAGGGGGAAAA
[-,A]
AAAACTTCTTTGACAAAGATGGAGAGAAGCTGTCTCTTGTATTCTTTTATCAATCC
AGGAAGCCTTTGGTTTGTACAATAAGTGGTCTGAGACTTTGTGTACTCCTCAGATAGGTC
CCGAGGACTAGATTGGTGGCCATCTGCAGAAAACAGAGGGGATATATTGACTCTGCAG
ATCTGCCCTTTGATTCTGCCATCTCTCAGCTGGCCCATGCCCTTTTGTGGCAGACTACTG
CCCAAGTTATAGACACTAACACAGGCACACTGAGTATGGGCTATGTTGATTATATACTAA
(SEQ ID NO: 44)
- 15545 AGGCGTGATGCATAAATATTTACAGTTGTAGGCAAAATTGTAATGTTATGATATGAATA
CATATTCATTTTTCAGGAGAGGCTTGTAGATTTCATCAAGAAATCTTTCACAAGAT
AGATAATCATTCATGTATCATTACCTAGATGCTCATGAAATTTTGCCACTTTATATAAT
TCCCTAGTTAGCCAAAAGGAGAGTAAGATGAAGAGGGGGGAAAAAAACCTCTTTGAC
AAAGATGGAGAGAAGCTGTCTCTTGTATTCTTTTATCAATCCAGGAAGCCTTTGGTT
[T,C]
TGACAATAAGTGGTCTGAGACTTTGTGTACTCCTCAGATAGGTCCTCGAGGACTAGATTG
GTGCCCATCTGCAGAAAACAGAGGGGATATATTGACTCTGCAGATCTGCCCTTTGATTCT
TGCCATCTCTCAGCTGGCCCATGCCCTTTTGTGGCAGACTACTGCCAAGTTATAGACAC
TAACACAGGCACACTGAGTATGGGCTATGTTGATTATATACTAAATGAGGGCAGAACCTTA
GAATGTCAGCTTCACTGTAAACTTTGGAGCAGGATTTAACACAGAATCAGCCCTGATACT
(SEQ ID NO: 45)
- 16199 AGAAGTTGGAAGCAGTGCCAAATACACAATGACTTTTTTTTCCATTTGGGGATTAGATG
TTCATCTTACATATCCAAATGTCATAACTTGCCTGCATGTGACTTCAGTACTGTCCACA
CCATTAAGCTGTGACATTTTCCATTTTAGCAATGTCAAGCTACCTCTTTATCATTAATA
TGAATACCTGAAGTAATCAGAGCATTCATGGGACTTGAAGAAAATACCTGGGTATGTCTT
ATGCTCCCTCTGTGACATCAAGTCACTCATCTACTTGGTCTTTTCTGATTCTAATATCC
[T,C]
TGCTCTCACTTCTAGAGAATGGTACCTCAATGGCAACTACCTCATCATATTGTGTCTG
TTGGAATTATCTTCCACTTTCCCTCCTTAAAAATTTAGGTAAAGATATTTCTAAGCTGG
AAATATTTTATTTTATTTTCAATTTAAATAGGTAGCTAATTTGTAGATGCCATATTC
CCTTCCAAATGCTTCTTCTAATCTTCTAGGTTATCTTGGCTATACAGTGGATTTTCTCT
TACCTGCATGGTGTTTTGTGTAGTGTGGTAAAGTGTGTGATGACATGATCCTTGCAGGT
(SEQ ID NO: 46)
- 16798 GTTGGTTAGCATGAGTTTGTGTGGCTAAATTAGTGTCTCATTTTGTTCAGGCACTTC
ACTAATATGAAATAGTTCTGTATCAAGTGAATTTCTTGTAGACTAATTTAGAGCAAA
AAAAGAGCAGCTACGATTTAAAGATAGTTGAGGTAGAATATCAAAGCTACTACTAATGGT
TTGGTCTAGGCACTGGTTATATATGGGAAAAAGGAAACTTCAAGCAGGAACATGA
CAATATCTGGCATTTAGAACAGCAGAGGAGTCCAGATGAGAAACAGAAGGCTATA
[T,C]
CCATATTCACATGAATCAGCCATCTCTCTTACACATTCACCCATTAAGAGAGGACAAG
AACAGTGGGATTAAAGAGAAATCCTCCTCTCTAGGCCCTGACAAAAGAGGGAATTTCT
TGCACTATCATGAATGCCAAATTTTATAAGCATTTCCCAAAGAGGTAAAGGAGAAGGA
AAAAAGTTTGAAGACCATGTCACTTAGTTTGAAGAAATAAGGAAATGATCATCTTT
CTCATGGAAGGGCATGAAGAGGGTGGGAAGGATCTTGCAAAATATTTGCTGTAACT
(SEQ ID NO: 47)
- 18103 CATTTTAGCATTCATTTTGTCTTGAATTTCTGCTCATATGTTCAAAGATTCTTTAACAG
GAAACACAGTTTATAGCTTCTCTTCAGAGAAAATATGTAATCCTCCTCCTCAGTAA
CATGCTTTAATCAGAAAGGTGGGAATCAGCCACCAAGCACTACCTTATCTTCTTCTC
TCCCTTCTCTCCACCATTAATGGTTCAAGGGAGGGGTTCATGGCAGGTGGACAAGGAGTGG
ATGGTGTGAATAATTTTGGCAGGTGTGGGAATTTAAATTTGAATTTTGTTCGGAAGAAA
[C,T]
GATGTGAGCTGGACTAGAAATGAAAACACCCATGACGACCAAACTTATGGTTAGGGGCA
GCTCGATAAGCCAGTGTGATTTATAGTCAGCACCTAACCTTGTCTAGAACACATT
CATTTACAAGAGATGTGTCAATATCTGTCTTGTGTCTTATTTGTACAAATAGAGTCACT
GGCTAGAAATCTGTGTCTTCTCCAGCTGATGGTCTATGGTTTATTTGTATTTCTTCCCT
TTGAAGTTGTGATATTGTCTTGGGAACAAAGGATATGAACCTATTATAGCTGTTTCTCT

FIGURE 3Q



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

(SEQ ID NO: 48)

18421 AAATGAAAACACCCATGACGACCAAACTTATGGTTAGGGGCAGCCTCGATAAGCCAGTG
ATGTCATTATATAGTCAGCACCTAACCCCTTGCTCTAGAACACATTTCATTACAAGAGATGTGT
CAATATCTGTCCCTTTGTTGTCCTTATTTGTACAAATAGAGTCAGCTGGCTAGAAAACTTTGTT
TCTTCCAGCTGATGGTCTATGGTTCATTGTATTCCTTTCCCTTTGAAGTTGTTGATATT
TGCTTTGGGAACAAAGGATATGAATCATTTATAGCTGTTTCCCTCTTCCCTTTAAGGGAGG
[A, G]
TATTATATAATAATTCTCAACTTCTTTAATCTAGACATCAGTAACCTCAGTCTTCATTCT
CACTAAATAGCAAACTTTCCCATAAATTCGATTACCTCATAAAAAATTCAGAAC
CTTTCAAGTATTTTGATGTCTTTGATTTACTTTGAAAATTACATGTAGCAGTTACTCCAG
AAGCTGACAAATGATCTTTTGGCAGCCAGGTTCCCTCTAGAATGGTTTTCAGAAGCTTTT
CAGGTAGTCTGGACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGGTTCTTTTCCCTCAT
(SEQ ID NO: 49)

18528 ACAAGAGATGTGTCAATATCTGTCCCTTTGTTGTCCTTATTTGTACAAATAGAGTCAGTGGCT
AGAAAATCTGTCTTCCAGCTGATGGTCTATGGTTCATTGTATTCCTTTCCCTTTGA
AGTTGTTGATATTTGCTTTGGGAACAAAGGATATGAATCATTTATAGCTGTTTCCCTCTTT
CCTTTAAGGGAGGATATTATATAATAATTCTCAACTTCTTTAATCTAGACATCAGTAACC
TCAGTCTTTCACTCTCACTAAATAGCAAACTTTCCCATAAATTCGATTACCTCATAA
[G, A]
AAATTTCAAGACACTTTCAAGTATTTTGATGTCTTTGATTTACTTTGAAAATTACATGTA
GCAGTTACTTCCAGAACCTTGACAAATGATCTTTTGGCAGCCAGGTTCCCTCTAGAATGGTT
TTCAGAAGCTTTTCCAGGTAGTCTGGACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGG
TTCTTTTCCCTCATTTAAAGTCATCTCATTTATGAAATGCAAAAGCTTTCTATGTTAGGAGC
CTGTTTCATCTTTATGTTAATTATATCTTTATTCAGTGGGCAAGCTTACTGACCTACGTC
(SEQ ID NO: 50)

18722 TATTATATAATAATTCTCAACTTCTTTAATCTAGACATCAGTAACCTCAGTCTTCATTCT
CACTAAATAGCAAACTTTCCCATAAATTCGATTACCTCATAAAAAATTCAGAAC
CTTTCAAGTATTTTGATGTCTTTGATTTACTTTGAAAATTACATGTAGCAGTTACTCCAG
AAGCTGACAAATGATCTTTTGGCAGCCAGGTTCCCTCTAGAATGGTTTTCAGAAGCTTTT
CAGGTAGTCTGGACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGGTTCTTTTCCCTCAT
[T, C]
TAAAGTCATCTCATTTATGAAATGCAAAAGCTTTCTATGTTAGGAGCCTGTTTCATCTTTA
TGTTAATTAATATCTTTATTCAGTGGGCAAGCTTACTGACCTACGTAAGTATAGCTGTTCC
TCTTCTAGGGAATGATTTGTTTAAAGCTGAAGGACTAGTGTAAAGAAAAATGGAAT
GAATCCTCATTTAGCTCTCTAAGACAAATTTAAATCAGCTATAAGTTTATGTACTAAATAT
GTCTTCATGATTAGCAATATAGATATACCTTTTATTTATTTATTTTCATTTTGAAAAGTGA
(SEQ ID NO: 51)

18775 TCATTCTCACTAAATAGCAAACTTTCCCATAAATTCGATTACCTCATAAAAAATTT
CAGAACACTTTCAAGTATTTTGATGTCTTTGATTTACTTTGAAAATTACATGTAGCAGTT
ACTCCAGAGCCCTGACAAATGATCTTTTGGCAGCCAGGTTCCCTCTAGAATGGTTTTCAGA
AGCTTTTCCAGGTAGTCTGGACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGGTTCTTT
TCCCTCATTTAAAGTCATCTCATTTATGAAATGCAAAAGCTTTCTATGTTAGGAGCCTGTTT
[C, G]
ATCTTTATGTTAATTATATCTTTATTCAGTGGGCAAGCTTACTGACCTACGTAAGTATGA
CTGTTCCCTCTCTAGGGAATGATTTGTTTAAAGCTGAAGGACTAGTGTAAAGAAAA
TGGAAATGAATCCTCATTTAGCTCTCTAAGACAAATTTAAATCAGCTATAAGTTTATGTAC
TAAATATGCTTCATGATTAGCAATATAGATATACCTTTTATTTATTTATTTTCATTTTGA
AAAGTGAATTTTGTGTAAGTTTAAAAACAAAGCTTGGTGTCTTTCTTTTCCAGTC
(SEQ ID NO: 52)

18951 CAGAAGCTTTTCCAGGTAGTCTGGACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGGTT
CTTTTCCCTCATTTAAAGTCATCTCATTTATGAAATGCAAAAGCTTTCTATGTTAGGAGCCT
GTTTCATCTTTATGTTAATTATATCTTTATTCAGTGGGCAAGCTTACTGACCTACGTAAG
ATAGACTGTTCCCTCTCTAGGGAATGATTTGTTTAAAGCTGAAGGACTAGTGTAAAG
AAAAATGGAATGAATCCTCATTTAGCTCTCTAAGACAAATTTAAATCAGCTATAAGTTTAT
[T, C]
GTACTAAATATGCTTTTCATGATTAGCAATATAGATATACCTTTTATTTATTTATTTTCATTT
TTGAAAGTGAATTTTGTGTAAGTTTAAAAACAAAGCTTGGTGTCTTTCTTTTCCAGTC
AGTCGGTCCCGAGAAAAATGCAACCGTGTCAAATATTTCCATCACGGGATGCTTTGTC

FIGURE 3R



Docket No.: CL001010

Serial No.: 09/776,705

Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- (SEQ ID NO: 53)
- 18974 ACTCCTGGCAGTAGTACTTTGCTGACTCTACTAGGTCTCTTTCTCATTTAAAGTCATCT
CATTATGAAATGCAAAAGCTTTCTATGTTAGGAGCCTGTTTCATCTTTATGTTAATTATA
TTCTTATTTCAGTGGCAAGCTTACTGACCTACGTGAATAGACTGTTCTCTTTCTAGGGA
AATGATTGTTTTTAAGACTGAAGGACTAGTGTTTAAGAAAAATGGAATGAATCCTCATTT
AGCTCTCTAAGACAAATTTAAATCAGCTATAAGTTTATGTACTAAATATGTCTTCATGAT
[T, G]
AGCAATATAGATATACTTTTATTATTATTTTCATTTTGAAAAGTGATTTTTTTTGTGA
AGTTTAAAAAACAAAGCTTGGTGTCTCTTTCTTTTCCAGTCGGTCCCGGAGAAAAATGCA
AACGGTGTCAAATATTTCCATCACGGGATGCTTGTTCATGTACCTGCTTGGCCGCTCTTT
TGGTTACCTTAACCTCTATGTTAGGTCACTCTGAAAGTCATTTCTATATGCAAAATCCTTT
GTAGGCTGGTCTTTGACCTGGGTAGGTATGATTTTTAAAAATTGCTTTCTATAAGCATG
(SEQ ID NO: 54)
- 19540 GGTATGATTTTTAAAAATTGCTTTCTATAAGCATGCTCTATAGATGACACATATTCAATT
AATATACTATTTTAGTTTTGTCACTTGACCTGAGGAAATGGGGCTGATTCAGCCTGGCT
AACAAAGTTACAAAGATTTGTGAATTAACACCTATTTTATAAAAAATATCCCTCAAACAAA
ATTATTTTCTCTAGGGATAGATGATTTTCTCTGGCTAGACTCCATAGTCCAACCTCAGG
CTACAAGTGATGAGAATGAATCCACTTGCATGTGATAAAGCTCCTTTGATGGAATTATTA
[A, C]
CTGCCACACAAATAGCAGGAAACTGCCAGTCTCTCAAGTTTGAATTTGCCCTCCTCTTTA
CCAGTCAAGTCAAAATCTGGGAGCTTGGGACTTTAGGTAAAAATTTCTGACATATCCCATTC
TATTTTGTATATACTAAATGATTTTCTTAAGAAAGAGGACATGACAGAATTTCTTTCAATCT
AAGAATGCCACCACAAAAAAGTGAATATGGCCACATTAGATTATGCTTGCAACATTTTC
CTCTCTGGCATCTTAACAGTTTCAAAAGGAGTAGGATTTGACTCCTTCCATGAAGTGTG
(SEQ ID NO: 55)
- 19841 CTGCCACACAAATAGCAGGAAACTGCCAGTCTCTCAAGTTTGAATTTGCCCTCCTCTTTA
CCAGTCAAGTCAAAATCTGGGAGCTTGGGACTTTAGGTAAAAATTTCTGACATATCCCATTC
TATTTTGTATATACTAAATGATTTTCTTAAGAAAGAGGACATGACAGAATTTCTTTCAATCT
AAGAATGCCACCACAAAAAAGTGAATATGGCCACATTAGATTATGCTTGCAACATTTTC
CTCTCTGGCATCTTAACAGTTTCAAAAGGAGTAGGATTTGACTCCTTCCATGAAGTGTG
[G, A]
CCACATAAACAGATTTTCATGGAATCACAATTTGACCTGGTAGCATATGTTTACATGAATC
AGTGTATCAATATAAATATATTTTGTATAAACCTCCTTTTAAAGTTTAACTTAATTT
TTTTCTTACTGACTTGGTAAATGAATTTGCATGTATGACAAATTTGGGAGGAAAAGATTC
AGGAGTAGGCCACCATTTGCTTAGGTTTTTTTCTATTTGACTAATATTTGACTATTAACT
CAACATGTGCTTTAGATTGGGCATTAACTTTTTGGCGTTGTGAATAATGAATGACGA
(SEQ ID NO: 56)
- 20170 TATTGACCTGGTAGCATATGTTTACATGAATCAGTGTATCAATATAAATATATTTTGTGA
TAAACCTCCTTTTAAAGTTTAACTTAATTTTTTCTTACTGACTTGGTAAATGAATTT
GCATGTATGACAAATTTGGGAGGAAAAGATTGAGGAGTAGGCCACCATTTGCTTAGGTTT
TTTTTCTATTTGACTAATATTTGACTATTAAACCAACATGTGCTTTAGATTGGGCATTAA
CTTTTGGCGGTGTGAAATAATGAATGACGAGGTCAATACTACTGAAGGTATTTTCACT
[A, C]
CTTTTGTCTGATCTTGAGGTGAAAATCCAACTACGCTTGATTTCCATAGATATTTTCTTG
TTATTTGTGCTTGGAGTCTGAATGAAGGTGTTTTCAAGTAGGGCTGCATCTTCGCTTA
GAGTAGTACCCACTGGGAGACCATTTAAAAATTATCTAATTTATCCCTGCAAGTTACTTT
ATACTTATTTTAAATGAGTTTCATAAGACAAGCAAAACTTGAAAGAGCCAAAAATATCT
GTTTTAGTGTGGTGTAGGAGTATAGTTGTGAGCTTGAAAAATGGTAGCAATCATTTCA
(SEQ ID NO: 57)
- 20343 TAGGTTTTTTTTCTATTTGACTAATATTTGACTATTAAACCAACATGTGCTTTAGATTGG
GCATTAACTTTTTGGCGGTGTGAAAATAATGAATGACGAGGTCAATACTACTGAAGGTAT
TTTCACTACTTTTTGTCTGATCTTGAGGTGAAAATCCAACTACGCTTGATTCATAGATA
TTTTCTGTATTTGTGCTTGGAGTCTGAATGAAGGTGTTTTCAAGTAGGGCTGCATCT
TGCTCTTAGAGTAGTACCCACTGGGAGACCATCTAAAAATTATACTAATTTATCCCTGCA
[T, C]
GTTACTTATACTTTATTTTAAATGAGTTTCATAAGACAAGCAAAACTTGAAAGAGCCCAA

FIGURE 3S



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- AATATCTGTTTTAGTGTGGTGATGGAGTCATAGTTGTGAGCTTGAAAAATGGTAGCAA
TCATTCATCCTAGAGTTTACACACTGGGTTTGTAACTGCATCAGGAGTGGCTGCACAGG
TAGGACAGGGGAGGTGGTAGGCTGGGAGAGACAATATGTGGGGCTTGGGTCTCTCATCC
CCTTCAACAAGAGCACTTGGTCTCTGTCTGATTGTAAATGCTTCTGTACAGCGAGAT
(SEQ ID NO: 58)
- 20519 GATATTTTCTTGTATTTTGTGCTTGGAGTCTCTGAATGAAGGTGTTTTCAAGTAGGGCTGC
ATCTTGTCTTAGAGTAGTACCCACTGGGAGACCATCTAAAAATTATATAATTTATCCC
TGACGTTACTTATACTTATTTTAAATGAGTTTCATAAGACAAGCAAAAACCTTGAAAGAGC
CCAAAAATATCTGTTTTAGTGTGGTGATGGAGTCATAGTTGTGAGCTTGAAAAATGGT
AGCAATCATTCATCCTAGAGTTTACACACTGGGTTTGTAACTGCATCAGGAGTGGCTGC
[G, A]
CAGGTAGGGACAGGGGAGGTGGTAGGCTGGGAGAGACAATATGTGGGGCTTGGGTCTCTC
ATCCCTTCAACAAGAGCACTTGGTCTCTGTCTGATTGTAAATGCTTCTGTACAGCGG
AGATAGATTATCACAATGTAAATGAGCTTGAGAGGCTCTTTATTTTGTATTATACCTTC
TGCAACGTTATCAGCTTCAGGACCTCTTTGTTCATTGAAATGAAGGTGCATAGCTAATG
AGCTCAGAGGCAAGACAGAGGTGCTGGATTCCAGGCTAGGTCTTTCTCTGTCTCT
(SEQ ID NO: 59)
- 20963 TGAGCTTGAGAGGCTCTTTATTTGTATTATACCTTCTGCAACGTTATCAGCTTCAGGAC
CTCTTTGTTCATTTGAATGAAGGTGCTATAGCTAATGAGCTCAGAGGCAAGACCAGAGGT
GCTTGGATTCCAGGCTAGGTCTTTCTCTGTCTGTCTCTCTATAAAATGTTGC
CATAAGTGACCTGTGTGATTGTGACAACCAAGCGGTTTCATTCTCTTTTCTCTGTGT
AGGAGAAGTTGAAGATGAATTACTTCATGCTACAGCAAGGTGTATACATTAGACATCCC
[T, C]
CTTCTCATGGTTTGGCTGGCAGTCTTGTGGCAGTAACACTAAGTGTGCCATTGTCTCT
TTCCAGTAAGTACATAAGACTTTGATGAAGAAACCTACTTGACCCATAAAATTAGTAC
ATGTGTTCTACCTTCATTTTGAATTAATTATAGGGTGAGTTTGCAATTGCAATGCTGAG
GATATTAATTTCTATAGCATTTTGAGTCACTTAAATTTGGCCATTTAATGTGTAGATAG
AGCAAGTAGTTTCAGGTGGTATTTTATAGTGTAGGAAAAAATCATAAAACCTTATTTT
(SEQ ID NO: 60)
- 21840 AAACAGTTATGCTATCTATCACAATCTCTCTCACACATGGGCTCTGCCAGACTCACACC
AGGTCACCCCCTCCCTGGCATTGTTCATTGGGTGTCAGTTTGTCTGAGATCCAGAGCAGA
GCTGTGTAGTGAAGATTGGGCTGTGTGAGTTAAACCAACCACTAAGGATAAACACAGGT
CTTCACCCCCTCCCTGGCAGCTCTGTCTTATAAACACTGAATTTACTCATTCATTGTAGGGG
GAAAAAATAAGTGACACAGTAACAGCACTGTCTCTGGACATAATGTTCCATACAGGGCT
[G, T]
GCATATGAAGACTATTTCTATAATGACACTGTGGTTCATTTAAATGCAGCTTGTGTGCTG
AAATATATTTTGGCACATTCCTTTTTCATGAGTGCATGAAATCAGATCCGTACTACTATG
GTGGCTAATATTTTACTCTTAAATCATGTCTTGGCTCTAATATATCTGAAGTATTTTCAG
ATGACATACACATAGCTTTAGCCTAAATCAGCTCCGTCTTGGGTACAGACAGAGACA
ACTATAAACAGAGGTATACGATAGGGTAAATTTGCCAGGCAACAACTTCCTGAGAAA
(SEQ ID NO: 61)
- 22783 TGAGAATAAAGCACTGATATAAATCTGACCATCAGGAACAGCAATAGTGTGIAAACATT
AGATGCCATTAGAACCAGAAATTGACCATAAGAACAGAGTTTCAGAAAAATGACTAAGTGC
TGTCCTTCATTATGTATTTCCACTCAACATAGCATTTATGAAACATTTTGACATTTATC
CTGTCTTCACTTGTCAATGTTACATTTATATAATCTGTGTAAAGTGTCTCCACTGCCCCAC
AGAGTCATAAGTCCCTGGGACTTGGTGATGTGCACAGTGACTGGCACAGAGGTGAGCTC
[C, T]
GTGTGTCTTGGGAAGAAAAATGGTCTTCAAAATGAATCTTGGCTTGTCTTGAATGTATAA
ACTGCTCTTTTCTAGCAAAAGCATAGACACTCTTTCCCTTGGTGACATGTGCTACGAATTC
AGCTGGGTGAGGATCTGGGCTAAATGAACCAAACTCCCTATACATGAAGGATACACAG
AGATGGTGACAGAGAGTGGTCACTTCCGTGAGTGGATCTCAATCAAGTCTCTGAAGCTA
AATTCATTTTCTTTTCTTACTAAATGATAAAAGTTGTATTGGCGCTTTTGTCTGTCT
(SEQ ID NO: 62)
- 22787 AAATAAAGCACTGATATAAATCTGACCATCAGGAACAGCAATAGTGTGIAAACATTAGAT
GCCATTAGAACCAAAATTGACCATAAGAACAGAGTTTCAGAAAAATGACTAAGTGTCTGTC
CTTCATTATGTATTTCCACTCAACATAGCATTTATGAAACATTTTGACATTTATCCTGT
CCTCACTTGTCAATGTTACATTTATATAATCTGTGTAAAGTGTCTCCACTGCCCCACAGAG
TCATTAAGTCCCTGGGACTTGGTGATGTGCACAGTGACTGGCACAGAGGTGAGCTCTGTC

FIGURE 3T



Docket No.: CL001010
Serial No.: 09/776.705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

REC
JUN 17 2003
TECH CENTER 1600/290

- [G, A]
TGCTTGGGAAGAAAAATGGTCTTCAAATGAATCTTGCCCTTGCTTGAATGTATAAACTG
CCTTTTCTAGCAAAAGCATAGACACTCTTCCCTTGGTGACATGTCAGCAATTCAGCT
GGGTTGAGGATCTGGGCTAAATGAACCAACCTCCCTATACATGAAGGATACACAGAGAT
GGTGACAGAGATGGTCACTTCGGTGAGTGGATCTCAATCAAGTCTCTGAAGCTAAATTT
CAATTTTTTTTCTTTACTAAAATGATAAAAGTTGTTATTTGGCGCTTTTGCTTTGTTTATTT
(SEQ ID NO: 63)
- 22825 CAATAGTGTGTAAACATTAGATGCCATTAGAACCAAAATTGACCATAAGAACCAGAGTTTC
AGAAAAATGACTAAGTCTGCTCTTCAATTATGTATTTCCACTCAACATTAGCATTATGA
AACATTTTGCACATTTATCCCTGCTCTACCCCTTGCAATGTTACATTTATATAATCTGTGTA
AGTGCTCCACTGCCCCACAGAGTCATAAGTCCCTGGGACTTTGGTGATGTGCACAGTGACT
GGCAGACAGGGTGAGCTCTGTCTGCTTTGGGAAGAAAAATGGTCTTCAAATGAATCTTGC
[T, C]
TTGTCTTGAATGTATAAACTGCCCTTTTCTAGCAAAAGCATAGACACTCTTCCCTTGGT
GACATGTGCTACGAATTCAGCTGGGTTGAGGATCTGGCTAAATGAACCAACCTCCCTA
TACATGAAGGATACACAGAGATGGTGACAGAGATGGTCACTTCGGTGAGTGGATCTCAA
TCAAGTCCCTCTGAAGCTAAATTCATTTTTTTTCTTTACTAAAATGATAAAAGTTGTTAT
TTGGCGCTTTTGCTTTGTTTATTTTCTGTATAACTTAGGGCTCAGATTTTCAATGTGTCAAATG
(SEQ ID NO: 64)
- 22967 CCTCACCCCTTGCAATGTTACATTTATATAATCTGTGTAAAGTCTCCACTGCCCCACAGAG
TCATAAGTCCCTGGGACTTTGGTGATGTGCACAGTGACTGGCAGAGGGTGAGCTCTGTCT
GTGCTTTGGGAAGAAAAATGGTCTTCAAATGAATCTTGCCCTTGCTTGAATGTATAAACT
GCCCTTTTCTAGCAAAAGCATAGACACTCTTCCCTTGGTGACATGTGCTACGAATTCAGC
TGGGTTGAGGATCTGGGCTAAATGAACCAACCTCCCTATACATGAAGGATACACAGAGA
[A, T]
GGTGACAGAGATGGTCACTTCGGTGAGTGGATCTCAATCAAGTCTCTGAAGCTAAATTT
CAATTTTTTTTCTTTACTAAAATGATAAAAGTTGTTATTTGGCGCTTTTGCTTTGTTTATTT
CGTATAACTTAGGGCTCAGATTTTCAATGTGTCAAATGCTGACTCACAGCATGGTTCTCC
TGACAGTTTATTTTCAATTTAAGGAACCTCTTACCAGTAAAGTTTATTTACTTGCCCTGATAT
CTCCACACATTAATAATAAACTAACAAAACCTAATCTGAATTAATAATCTATCAGCTTTA
(SEQ ID NO: 65)
- 23248 CATGAAGGATACACAGAGATGGTGACAGAGATGGTCACTTCGGTGAGTGGATCTCAATC
AAGTCTCTGAAGCTAAATTCATTTTTTTTCTTTACTAAAATGATAAAAGTTGTTATTTG
GGCTTTTGGCTTGTTTATTTCTGTATAACTTAGGGCTCAGATTTTCAATGTGTCAAATGCT
GACTCACAGCATGGTTCTCCCTGACAGTTTATTTTCAATTAAGGAACCTCTTCAACAGTAAAGT
TTATTTACTTGCTTGATATCTCCACACATTAATAATAAACTAACAAAACCTAATCTGA
[A, G]
TTAAAATCTATCAGCTTTAGGCATTTATTTTGTGTCTCTCTTTCAACATGGTAACTGG
GCTCTCTTTCTTAGGAGCTTGAGAAGATATGACTGGGGTTTGTTTTCTCTACTTCATTT
ATTATCTTTCTTTTTCCAATCAGGTTAGTTTTTCTTTTGTAGTAAAGGTGCATAGTA
ACTGCTTTGTAGTATTTGTGAACAAGTGAATAAATGAATGAATTAAGGTAGTGTTTTCA
CTAGCAGCCCAACATTTCTTTCTCTTTAGTAGTGGGTGGGTATCAGTTATGGAATGGC
(SEQ ID NO: 66)
- 23764 GAAATGAATTAAGGTAGTGTTTTCACTAGCAGCCCAACATTTCTTTCTCTTTAGTAGTG
GGTGGGTATCAGTTATGGAATGGCACTCCCTTCCAGAGGACTGATCATGTCAATTTTCAG
CTTATGCTTTCCCTTTATGCAAGTAAAGTTTCCATATTTCCATAAAGAACAAGAAACCAAT
AATCCTAATGGATATATAATGAACACACAGATGAAAAATTTCACTGCCATGGCTTTGAAA
AAAGATCCCTAGCTACTTTGTATTTCACTTTATAATTAATAATCAGTCTTTTCACTTATGTT
[G, T]
TCTTCAGATCTCTGTTTTGAAGTGTATATAGATATCAACATAGAAATGCAGGTATATT
GCTATCAACTGCAGTGGAGCAGTGATTTGTAGGTTTTTCCACATCTTTGCCCTTAAGCAAA
CCTGCAAAATCAAGTGTGAGCTACGCTTAAACAATGGGAGAGGCTTTTTTTTTTTTTT
AAGAGTTAGAATAAGACTCTCACTTCTCTCTGTGCTCCACATTTTGAACCTTCACAT
GGGCCCCGTCATCAGAATACAGCACCCCTAACAGGCTCTGTTCAGGACTCTTTCTCTG
(SEQ ID NO: 67)
- 23765 AAATGAATTAAGGTAGTGTTTTCACTAGCAGCCCAACATTTCTTTCTCTTTAGTAGTGG
GTGGGTATCAGTTATGGAATGGCACTCCCTTCCAGAGGACTGATCATGTCAATTTTCAGC
TTATGCTTCCCTTTATGCAAGTAAAGTTTCCATATTTCCATAAAGAACAAGAAACCAATA

FIGURE 3U



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- ATCCTAATGGATATATAATGAACACACAGATGAAAATTTACCTGCCATGCCCTTTGAAAA
AAGATCCCTAGCTACTTGTATTTTCATCTTATAATTAATAATCAGTCTTTTCACTTATGTTT
[C, T]
CTTCAGATCTCCCTGTTTTGAAGTGTATATAGATATCAACATAGAAATGCGAGGTATATTG
CTATCAACTGCGAGTGGAGCAGTGATTCTAGGTTTTCACATCCCTTGCTTAAGCAAAC
CTGCAAAATCAAAGTGTAGCTACGCTAAACAATGGGAGAGGCTTTTTTTTTTTTTTA
AGAGTTAGAACTAAGACTCTCACTTCTCTCTGCTCCACATTTTGACCTTCACATTG
GGCCCCGTCATCAGAAATACAGCACCCCTAACAGGCTCTGTTGAGACTCTTTCTCTGG
(SEQ ID NO: 68)
- 24432 GGATGGTGTGGGGAACCTCCCTGACCCACAGCATCTGACCCACATTTCCAGGTTCCTAGC
GACTTGTGTGAGTAAAGAAAAAGGCACATAGCTAAGTGAAGAGCAGATGAGGCTTGGTG
GGAATCAGCCAGTGGTCTGCTTGGCTAGCAAAGGTAAACAGAACTGCTGGGGCTTTTGGTCC
TAGGCTCACTACTCAGGGAGGCACTTTAACATGGAATGACCAGCAAGTTTCTCTCTGAT
CTTTTCCACACCACCAAGCCTAGTACCTCCCTCCCTCTTTGCTCTGTTGCTCTCTTC
[A, G]
GGAATGCACTGGAACACCTTCAGTCTCTGTTTGAATTTTCTTATTCCTTATTCAGAAA
GAGGAAGAAGCTTTTGCTTTTACTCCACCGTTCTACCTATTTATCCATAAATTTCTG
TGATCTCATATCATTAGGCCAAATGTTAATCTTTCTGGGAGCCAGGAGACTGCTTTTACA
TTACAGGGCCCTGGACATATAGGACTGCTCTAAGTCACTCTAAGTCACTTATTGACTT
GAATGCACCTTTTAAACAAGTACTAAAAACAACCTGTGACTATTTCTGAAAATGAGC
(SEQ ID NO: 69)
- 24538 GATGAGGCTTGGTGGGAATCAGCCAGTGGTCTGCTTGGCTAGCAAAGGTAAACAGAACTGCTG
GGGCTTTTGGTCTAGGCTCACTACTCAGGGAGGCACTTTAACATGGAATGACCGACAA
GTTTCTCTCTGATCTTTTCCACCAACCAAGGCTAGTACCTCCCTCCCTCTTTGCT
CTGTTGCTCTCTTTGGGGAATGCACTGGAAACACCTTCAGTCTGTTTGAATTTTCTTA
TTCTTATTCAGAAAGAGGAAGAAGCTTTTGCATTTACTCCAACCGTTCTACCTATTATT
[C, G]
CCATAAACTTTCTGTATCTCATATCATTAGGCCAAATGTTAATCTTTCTGGGAGCCAGG
AGACTGCTTTTCACTTCAGAGGCCCTGGACATATAGGACTGCTCTAAGTCACTCTAAGT
CAGCTTATTCAGTTGAATGCACCTTTTAAACAAGTACTAAAAACAACCTGTGACTATT
CTCTGAAAATGAGCCTATATCTCATACCTTATTTATTTCTGTTTAAACACTGTGAAAACAAT
AAGTCTCTGGCACTATGTATATACCAATAAAAGCTTATTTGTAAGCCTACTAATTTGAC
(SEQ ID NO: 70)
- 24693 CCTAGTACCTCCCTCCCTCTTTTGTCTGTTGCTCTCTTGGGAATGCACTGGAAACACC
TTGAGTCTGTTTGAATTTTCTTATTCCTTATTCAGAAAGAGGAAGAAGCTTTTGCATT
TACTCAAGCCCTTCTACCTATTATTCCATAAACTTTCTGTGATCTCATATCATTAGGCC
AAATGTTAATCTTTCTGGGAGCCAGGAGACTGCTTTTCACTTCAGAGGCCCTGGACATAT
AGGACTGCTCTAAGTCACTCTAAGTCACTTATTCAGTTGAATGCACCTTTTAAACAAG
[T, C]
GACTAAAAACAACCTGTGACTATTCTCTGAAAATGAGCCTATATCTCATACCTTATTTAT
TCTGTTTAAACACTGTGAAAACAATTAAGTCTCTGGCCTATGTATATACCAATAAAAGC
TTATTTGTAAGCCTACTAATTTGGACCAAGTTTGTACAATATTGAATAAGCACTAATTTGCAG
ATCATAATGTAGAAATATAGGCTGCTGAGGAAAACAATATCACACCATTTGCTTTCTCTCA
GTTTCTCTTTTCAAGATGAGTTTCAATAATGTTCACTAATCCAATTTTAAATCTTTTACA
(SEQ ID NO: 71)
- 24819 AACCGTTCTACCTATTATTCCCAATAAATTTCTGTGATCTCATATCAITAGGCCAAATGT
TAATCTTTCTGGGAGCCAGGAGACTGCTTTTCACTTCAGAGGCCCTGGACATATAGGACT
GCTCTAAGTCACTCTAAGTCACTTATTCAGTTGAATGCACCTTTTAAACAAGTACTA
AAAAACAACCTGTGACTATTCTCTGAAAATGAGCCTATATCTCATACCTTATTTATCTGT
TTAAACACTGTGAAAACAATTAAGTCTCTGGCCTATGTATATACCAATAAAAGCTTATTT
[C, T]
GTAGCCTACTAATTTGACCAAGTTTGTACAATATTGAATAAGCACTAATTCAGATCATA
ATGTAGAAATATAGGCTGCTGAGGAAAACAATATCACACCATTTGCTTTCTCTGAGTTTCC
TTTTTCAAGATGAGTTTCAATAATGTTCACTAATCCAATTTTAAATCTTTTACAAAGTTA
TTCTTAAACATTTTCCAGAGACTATCTGTTTGTCTATCTAGAAATGAATTTGCTTTTTC
AGCCTAAACAGATGGCTTAAATTTTGGTGGAGTGGTATGAAAGGAATGTACATGAGAA
(SEQ ID NO: 72)
- 25743 TATCCAGTTACAGCAGCGTAACTTGAGCAGCTGCTGCAAACTGAGGCTCTCTTGAACCTT

FIGURE 3V



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.

Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

- CGCCTACTTATTTTCAGCTGCTAAAATAGGGCTGAAATCIGTCAAGGATCCTGAAGGGAAG
GATAAGATTCTTACTATTCAATTTAATTTAAGCTTTTATTCAGTGCTGCTGTGTGCACA
ACACTAAGCTAGAAAGTCTGAGGAATGTTTAGATTATTAGGTCTGTCTCTTGCCTTTCA
TAGATTACAATCTATTGATAGGGAGAGCTAAAAAGGAGAGAAAGAGGAGGAGCAACA
[C, T]
AAAAAGCTCAAAATTTTAAAATACCATTTTAAAATTTTATTTTAAAATGTTAAATACCAT
GCAAAATTAAGGAAAACCTAGATTTCATAAAAATTCCTTTTCAATCTTGTGTAAATCAAT
TCAGTGCTTGCCCTTAATGTCTCATCCAGTCTGATGAGACATGTTTGTGATCAACAAGG
GTTTACTATGTTTCTAATTTATGTGTCTTGCCGTGTATCTCTTCTGACCGAGATTATT
TTTAAACAATAAATCTGAAAACCTAAGAAAGTGAAGCATAAAATATTGTCTTATAAAATA
(SEQ ID NO: 73)
- 26044 AAAAAGCTCAAAATTTTAAAATACCATTTTAAAATTTTATTTTAAAATGTTAAATACCAT
GCAAAATTAAGGAAAACCTAGATTTCATAAAAATTCCTTTTCAATCTTGTGTAAATCAAT
TCAGTGCTTGCCCTTAATGTCTCATCCAGTCTGATGAGACATGTTTGTGATCAACAAGG
GTTTACTATGTTTCTAATTTATGTGTCTTGCCGTGTATCTCTTCTGACCGAGATTATT
TTTAAACAATAAATCTGAAAACCTAAGAAAGTGAAGCATAAAATATTGTCTTATAAAATA
[G, C]
GCCAAGTAAAAATGACACTCCATTTCAAATATCAAAAGTTAGCATCAAGACTGCACAAG
ATGAATGTACAGTCATGTGTCTTACAAATGTGGACATAATCTGAGAAATGCATCTTTA
GGCAATTTTGTCTTGTGCAACACCATAGATTGTACTTGACGCTTAATTTGGTGGAGCCT
ACTATACACTAAGGCTATATGGCATAGCCTAGTACTCCTAGGCTACAAACCTGTACAGCA
TGTTACTGTACTGAATAGTGGAGTACCTGTAAACATAATGGTAAGTATTGTGTCTCCAA
(SEQ ID NO: 74)
- 26555 AGTACTCTTAGGCTACAAACCTGTACAGCATGTTACTGTACTGAATAGTGGAGGTACCTG
TAACATAATGGTAAGTATTGTGTCTTCAAACCTAGAAAAGCTACTGTAAAAATACAGTA
TTACAACTTAGGGTATCACTGTCTTATATGTGGTCTGTGTGTGACCGAAATGACTATGC
TTAATACCACTGAACCTGTACACTTAAAAATGGTTAAGATGGTAAATTTCTATGTATGTAT
GTTTATAATAATAAAAAAATTGAAAAAGCATCAACATCTTTTCTGGGAAAAAGAAAA
[G, A]
GAAAGAAAAATGCATTAGAGTGTGAGAAATATTGAAGTAATAGATAAAGTCAAAAAA
GAAATGATCTTGCCCTTGAACCTTTCTTGTTTAAGATTCTGATCAGTGTACACTGT
ATTTCCAAACGACCTTTCAGCTGGATACGACATTTCTGATTGACGCTGTGTCTTATGC
ACTTAATATGTTCTGGTATCCTTGTGCCAACTATAAAATACATCTTGGGATTCATAGG
TGAGTTTCAGAAAGGCTTCAATTTGGTCAACCCAACTCAGCCTCATTAATGATGGAC
(SEQ ID NO: 75)
- 27886 GGTTTATTTAAAGTGTGTGCTGGCATCTCCTTTGCTAGGAACCTGCTGGTAAGACATTGA
CCTTGCCCTGTGTGTCTTCTCAGGGCTTCTTCTGCCACTATGCTGATTTTATTTCTT
CCAGCAGTTTATCTTAAACTTGTCAAGAAAGAACTTTTAGGTCAACCCAAAGGTC
GGGTAAGTAAACCTTGCAATTTCCCCATTTATAGTTGTCTTCCAACTACTTGAATA
AACTAGAAAAATACATAGTTTCAAAAAATGAATCAATGTACAGAACCAAAATCAAAA
[A, C]
TGGCTAGAACTTTCTGGTAGCAGAGAAAGGGACATATTTCTGAAACTCAAATGATTCT
ACTTCAAATATCAAATATCTGTGTGTGAGTCTGTATACATGTCAAATAGTAGTAGCCTT
TCCCACAGACATATGCTTCAGGCAATAGCAGTGTCCAATACCAAGCTGCTGTGTGTG
TATCCGTGGAAATCATGCAAGAGGAATTAGGCTCCCTAGCGGTGTATGGAATAATT
AAATATTTTGGTATGTTTGTAGGTTTGCAGGCAAGGAAAGATGTTGCTTTTGT
(SEQ ID NO: 76)
- 31884 CTTTATGTTAGTTTGAAGAATCCATTGAAGATAGAAAATGAGAGAATAGAAGAAACC
TGAGAATAGTAAATAAAGAGCAGAGAAAATATGGGGCAGGGAACATGTGAGTGCTA
AGGATTGATTATGAATGAACGATTAGGGGATTGATGGATCAGGGTAAAGTATATGCTT
AACTTTATAAGAACTTCCACATAGTTTCCACAGTGTCTTACCATTTCATTTCCACC
CGTACTACCTAACCTCCACTGACTCCACAGCCCTGCCAACATTTGGTGTGTCTTTTG
[T, C]
ATTTTAGCCTTTCTAGTGGGTCTGAAATGGTAACTCATGTGATTTTCATTTCTGCTTCT
GTGCAACTAAATGTTGAAACCTTTCAAGTGTTTAATGGTCACTCATATATCTCTTTTG
TGAAGTGTGATTCAAATCTTTTGGCCATTTTAAAAATTTAGGTATGTGTTTTATTTGG
GTATTTGTAGAAAGCTCTTAAATATGGATCCATGTCCAGATTGCCAATATATTTTCCAG
TCTATGGTATGTTGTCTTATTTCTTAAAGGTGTCTTAAATACATCTTTCTGGGGCCAGG
(SEQ ID NO: 77)

FIGURE 3W



Docket No.: CL001010
Serial No.: 09/776,705
Inventor: Karl GUEGLER et al.
Title: ISOLATED HUMAN TRANSPORTER PROTEINS...

RECEIVED
JUN 17 2003
TECH CENTER 1600/2900

TTCATTTCIGCTTCIGTGACAACTAATGTTGAAAACITTTCAAGTGTAAATGGTCACT
CATATATCTTCTTTTGTGAAGTGTGATTCAAATCTTTTGCCATTTTAAAAATTTAGGT
TATGTGTTTTTATTTGGGTATTTGTAGAAGCTCTTTAAATATGGATCCATGTCCAGATTGC
CAATATAITTTTCCAGTCTATGGTATGGTGTCTTATTTTCTAAAGGTGTCTTAATTACA
TCTTTCTGGGGCCAGGTACCATAGCTCAAAGTTTTGCAATTATGTCTTAATGAGATAA
[T,A]
ATTAAATCAGAGTGGTATAGTCAAAATTAATGTTTTGATGTCTTGGGCCATATAGGTAG
GACTGGATCATCTAACCAAGATGCAAAAAAAAAAAAAACAAAAACAAAAATAGTACTTG
GAAAAACTTATTTTAAATTAAACA
(SEQ ID NO: 78)

FIGURE 3X